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VANDALISM TO CULTURAL RESOURCES | 6 '80
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Lance R. Williams

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CHAPTER I

STUDY PROBLEM

Introduction

It will be seen from the notes on the various groups of ruins in the San Juan watershed that great injury has been wrought to the interests of archeology by the widespread, unlicensed, random digging among the ruins and burials. This is still going on in many places. . .

This type of vandalism is an old activity.¹ The preceding lines were written in 1903 by T. Mitchell Prudden (p. 288), who was speaking of the Four Corners region of Arizona, New Mexico, Colorado, and Utah. Fortunately, there was early recognition by some educated persons of why the activity was destructive. Prudden continued: ". . . it is now evident that to gather or exhume specimens. . . without at the same time carefully, systematically, and completely studying the ruins from which they are derived, with full records, measurements, and photographs, is to risk the permanent loss of much valuable data and to sacrifice science for the sake of plunder" (p. 288).

However, it is exceedingly unfortunate that this form of vandalism continues today, largely unabated since the turn of the century. Furthermore, human destruction of the physical remains of our cultural heritage is not simply limited to digging in prehistoric ruins, but is aimed at virtually every remnant of our past, both prehistoric and

¹ See Appendix A for definition of vandalism.

historic. The forms of vandalism range from careless walking or touching to bulldozer excavations and arson.

If vandalism of these "cultural resources" is not stopped, soon there will be nothing remaining to destroy.² Dr. Charles R. McGimsey III, a professional archaeologist and leading advocate of promptly creating public support for the science, wrote: "This nation's past is contained in its soil. That soil is being disturbed and redistributed at an ever-increasing rate. Those of us alive today will be the last ever to see any significant portion of it in an undisturbed state" (1972, p. 17). His colleague, Dr. Hester A. Davis, State Archaeologist with the Arkansas Archaeological Survey, believed that digging and collecting run a close second behind land alteration projects as a cause of site destruction (1972). Dr. Emil Haury, an archaeologist with the Arizona State Museum, reported: "Vandalism (in Arizona) is at an alltime high. Many people are working the burials because that's where the so-called loot is--the pottery, jewelry, etc. Much of it is shovel work but they're using bulldozers and backhoes. . ." (Topeka Capital Journal, May 25, 1975). A National Park Service pamphlet described these vandals: "Highly mobile, often equipped with electronic gear, they can despoil a site in minutes" (Manucy, 1969, p. 6). The Bureau of Land Management states in one of its leaflets: "(In recent years) more damage has been done to. . . ancient sites than in the last 600 years. At this rate, unless we act now to save this piece of our American past, there may not be anything left to save" (Bureau of Land Management, undated). Clewlow

²See Appendix A for definition of cultural resources.

et al., professional anthropologists, believed the destruction of archaeological sites had reached epidemic proportions and emphasized its seriousness. They wrote: ". . . in large regions of the nation, it would not be overstating the situation to predict that, even if job opportunities and research funds (for archaeologists) improve, there will be no sites left after 10 more years if the current rate of site destruction remains the same" (1971, p. 472).

Given this frequently stated concern with cultural resource vandalism and destruction, the primary intent of this paper is to describe vandalism to the cultural resources of dispersed recreation lands within the Rocky Mountain West.

Problem

Vandalism to the cultural resources of the Rocky Mountain West is a major cause of the loss of information upon which a complete understanding of our heritage, both native American and foreign, must be built. Cultural resources are non-renewable resources. Once damaged, destroyed, or removed, it is difficult and usually impossible, to repair, reconstruct, or restore them.

The problem stated herein is two-fold. First, and most importantly, while the extent of cultural resource vandalism appears to be sizeable from all that has been written and said of it, little is actually known of its true dimensions in this region. This is especially the case for the remote, isolated areas receiving recreational use. Secondly, little has been written of management actions which have been taken to protect cultural resources, and thus

there is scarce basis--except for one's own experience--for knowing which actions have the potential for success.

This problem is worthy of consideration by public authorities because it is valid to say that vandalism presents a management dilemma, of sometimes great proportions, to natural and recreation resource managers of this region. Managers of United States government lands as federal employees have a legal obligation to preserve and protect cultural resources. As public servants they have a responsibility to this generation and to ones to come to assure that, insofar as possible, our prehistoric and historic structures, sites, and objects remain intact for learning and enjoyment. The objectives which follow were designed to confront this problem.

Objectives

The specific objectives for the study were:

- 1) To identify the characteristics of cultural resource vandalism in dispersed recreation areas, and to compare these characteristics with those for non-cultural resource vandalism.
- 2) To identify the various techniques and approaches used by resource managers to control cultural resource vandalism; to describe their successes and failures; and to evaluate the effectiveness and limitations of these techniques.
- 3) To offer recommendations for managerial solutions to problems of cultural resource vandalism.

Dispersed recreation areas present a unique challenge for the protection of cultural resources, and this is the reason for exploring

the problem of vandalism within this context and not within localized, concentrated use settings. Law enforcement protection--due to limited manpower, the scattered nature of many cultural resources, and often vast square miles of land--is not now, and may never be, very feasible or desirable. Thus, other approaches must be researched, developed and used.

Limitations

The description and analysis of cultural resource vandalism is limited by the research conducted for it. In this study there are two limiting factors: coverage of the geographical area in question, and backgrounds and viewpoints of survey respondents.

Geographical Area

A questionnaire was developed as a survey instrument and distributed to resource managers. (Chapter III contains details.) The states represented in the survey were: Arizona, Colorado, Idaho, Montana, New Mexico, North Dakota, South Dakota, Utah, and Wyoming, and limited portions of California, Kansas, Nebraska, Nevada, Oklahoma, and Texas. The first nine form "The Rocky Mountain West" for the purposes of this paper.

One limitation related to geography is that any conclusions derived from this study are only fully applicable to this region, and not necessarily to other parts of the country.

Another limitation deals with the coverage within this region. There was not 100 percent coverage of dispersed recreation areas within the nine core states. Basically, three federal land managing

agencies were surveyed: The National Park Service (NPS), the United States Forest Service (USFS), and the Bureau of Land Management (BLM). In addition, two other agencies were represented, but in a much more limited fashion: the federal Bureau of Reclamation (BR) and the Colorado Division of Parks and Outdoor Recreation (CDPOR). Other state park systems and federal land areas were excluded from the survey.

Points of View and Backgrounds of Respondents

The survey respondents were primarily resource managers. They were all paid employees of land management agencies. They were by and large not trained professionals in the cultural resource or related fields: archaeology, history, prehistory, historic architecture, and paleontology. They were therefore limited by the degrees to which they could both recognize vandalism (sometimes it is difficult) and judge its deteriorating effects. Among the responses of each of the three main agencies, the BLM contributed the most responses from cultural resource professionals (as employees), followed by the Forest Service; the National Park Service contributed the least. (See Appendix F for a list of employee responses by agency and position.)

Organization of Paper

A few words are needed concerning the organization of the remainder of this paper. Chapter II discusses cultural resources and reviews the literature on vandalism, thereby providing additional rationale for undertaking this study. Chapter III describes the methodology employed to collect descriptive data and to tabulate and

analyze it. Chapter IV furnishes the results, discusses them, and introduces into the discussion the findings and thoughts of other researchers and writers. Chapter V summarizes the research, draws conclusions based upon it, and makes recommendations for the alleviation of vandalism to cultural resources.

CHAPTER II

FURTHER JUSTIFICATION FOR STUDY

Cultural Resources

Study of Cultural Resources

The greatest damage which cultural resource vandalism inflicts is to the "context." This is a key concept in archaeology and has an analogy in history as well. Context refers to the associations among structures, artifacts, features, and the soil in and on the ground. These associations can provide relative dating measures, and information on changing climatic and geologic conditions, on human utilization of the environment through time, on technological changes, on religious or ceremonial observances, and on many other topics of interest. In short, understanding of the context is the necessary first step for interpreting the entire cultural system under study. For example, whether a projectile point comes from a grey clay layer of earth or an adjacent brown sandy layer may change its date of last use by hundreds of years. An example for the history analogy might be this: the construction materials of an intact structure tell us about the architecture, construction techniques, possible material sources, possible use(s) of the structure and possible dates of construction and use. If large portions of the structure are missing or the materials are found in a heap on the ground, the important associations are lacking and the historian has much less to go on.

A major problem is that the vandal literally destroys the context; he may carry off the artifacts and they may be preserved, but without their context they are much less valuable to science. Middlemas (1975) wrote: "Without precise identification of the site and analysis of the layers deposited around it over the centuries, an antiquity is almost valueless to scholars" (p. 211). The archaeologist conducting an excavation also destroys the context in a sense, but the difference is that he makes a careful record of it on paper and on photographic film. The National Park Service pamphlet "Yours to Preserve" (Manucy, 1969) described the process of properly digging a site as similar to reading a book. In archaeology, however, you tear out each page as you read it; if the page is not to be lost, the information must be written down.

Archaeologists generally apply a research design to a geographical or cultural area they are investigating. That is, they approach the archaeological work with specified objectives--and use certain techniques to meet those objectives--for what they wish to accomplish or learn from the investigation. Site vandalism prior to the archaeological study can greatly limit and even make impossible the choice of a research design. As one example, the Bureau of Reclamation (1975) contracted an archaeological survey for its Orme Reservoir project in Arizona. The archaeological team located 176 sites. Of these, 36 percent had been vandalized. Admitting the additional influence of natural and other man-caused disturbances to each site, the team judged 72 percent of the non-vandalized sites to have excellent information potential, as compared with only 40 percent for vandalized sites.

Clearly, the range of research strategies to further investigate the disturbed sites was considerably reduced by the effects of vandalism.

An important ethic in the archaeological profession is to leave as many sites unexcavated as possible in the face of current land alteration projects, natural erosion, research needs, and training needs for student archaeologists. The rationale is that future archaeologists will have sites to excavate when research designs and excavation and analytical techniques may be more sophisticated than at present. Vandalism curtails what might have been learned at some future date. Science and public enjoyment suffer across this time continuum.

Types of Cultural Resources

Cultural resources are categorized into either historic, or prehistoric, works of man. Size or type are not necessarily reflections of importance, in part because, as mentioned above, the associations (i.e., the context) are generally of utmost value. Archaeology is the study of these material remains. Following categorization into historic or prehistoric,³ cultural resources can be identified as: structures (generally immovable), sites (the assemblage of material remains at one distinct locale), artifacts (movable remains), and features (e.g., fire pits, post holes). The types of cultural resources found in the Rocky Mountain West are discussed in Chapter IV.

³Because of the persistence of certain cultural traditions into the time of European contact, it is not always an easy task to determine if a cultural resource dates from the prehistoric or the historic era.

Legislative Support

There are several major laws and one Executive Order at the federal level which focus on cultural resources. One of these bears directly on subject of this paper. It is entitled, "An Act for the Preservation of American Antiquities," or simply, the Antiquities Act (Public Law 59-209), passed by Congress in 1906. The passage of the Act was primarily a response to the massive plundering of Indian ruins occurring at that time. Therefore, it is not surprising that the law imposes a penalty upon any unauthorized person "who shall appropriate, excavate, injure, or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States. . . ." The penalty, upon conviction, shall consist of a fine of not more than \$500, or imprisonment for not more than 90 days, or both. Section 3 established a permit system for legal examination, excavation, and collecting. Permits are to be granted to qualified institutions (not individuals), and the artifacts obtained are to be placed in public museums for permanent preservation. The full text of the Antiquities Act appears in Appendix G.

Other major pieces of federal legislation and the Executive Order which pertain to cultural resources are:

- Historic Sites Act of 1935 (P.L. 59-209)
- Reservoir Salvage Act of 1960 (P.L. 74-292)
- Historic Preservation Act of 1966 (P.L. 89-665)
- Executive Order 11593
- Archaeological Conservation Act of 1974 (P.L. 93-291)

Clearly, when the contents of the above federal statements are examined, the federal government has made it a firm policy at each of its operating levels to plan for, with, and around cultural resources.

Many states have enacted their own antiquities legislation, some of it effective, some of it not. McGimsey (1972) made a strong case for the critical role of the states in preserving our cultural heritage.⁴

Relationship of Cultural Resources and Recreation Management

There are several reasons why managers of dispersed recreation areas must be concerned with cultural resources. First, cultural resources occur in some form in virtually every management area throughout the Rocky Mountain West. Plainly, they are not as abundant as natural resources, but nevertheless they are widespread. Unlike some natural resources, they are non-renewable. Secondly, cultural resources are a recreation resource to many people. People seem to show great interest in how other people have lived. Perhaps part of the human makeup is to want to understand itself, thereby giving better direction to the individual life. One way to accomplish this is to look at the lives of others, past and present. Much of cultural resource vandalism is a misguided interest in history and prehistory. Thirdly, as mentioned earlier, the federal recreation manager has a legal obligation to manage cultural resources.

Overview of the Literature on Vandalism

Vandalism, in the sense of wanton, destructive behavior, has long been a major plague to public facilities in cities, especially school

⁴Refer to McGimsey (1972) for information on the status of laws in each state. Or write for an update to: Dr. Hester A. Davis, University of Arkansas Museum, Fayetteville, AR 72701.

buildings. There now seems to be a general increase across the country in the frequency and intensity of this depreciative behavior. A few years ago, the U. S. Office of Education estimated the annual costs resulting from vandalism in public schools at more than \$100 million (Time, 1970). In the same article, the cost of public telephone repairs and replacements due to vandalism during 1970 was reported at about \$10 million per annum. This destructive activity in recent years has spread in another domain, National Parks and Forests (Petty, 1966).

Cultural resource vandalism, on the other hand, seems to be on the whole a characteristically different "type" of depreciative activity than that referred to above. The motives for cultural resource vandalism appear to be of a distinctly different quality and more easily identifiable. For example, collecting, whether for personal collections or profit, seems to be a major underlying motive. As such, the damaging parties would likely be more methodical in their approach and older in age than the youths damaging school buildings.

Looting of archaeological sites has been taking place for many years. Meyer (1973) offered an excellent account of the supposed origin of this activity, its evolution through the years, and its current, frightful dimensions. He focused on the interrelationships of looters, art dealers and art collectors, including museums as collectors. The following statement by Meyer sums up his belief as to what comprises the primary motive behind current vandalism to archaeological sites: "More than any other single element, the increase in art prices has been responsible for the wholesale theft, mutilation and destruction of art everywhere in the world. . ." (pp. 5-6). According to Meyer,

archaeological sites are destroyed primarily in the course of searching for objects to sell as art.

Meyer discussed this plunder as a global problem. Many countries are losing their physical cultural remains by this means. In the last 45 or so years the pre-Columbian field has been particularly subjected to looting. It is a "growth" market in art for the following reasons: 1) it is now fashionable, 2) formerly inaccessible areas are being rapidly opened up, and 3) there is more money and more collectors in the art market (Meyer, 1973).

In 1971, the link between the art market and site vandalism was clearly established in this country as a result of the auction of the Green Collection of American Indian Art. The sale, while legal, created new interest in North American antiquities through publicity given the new record-level prices paid for the pieces. Meyer said of the effect: ". . . looting, which was already epidemic, spread with fresh intensity" (1973, p. 8). Williams reported: "New York auction galleries, which formerly featured materials only from the high cultures of Central and South America, now regularly offer archaeological materials from North America" (1972, p. 51).

Prehistoric sites in the United States have been luring pot-hunters for a long while, high market values or not. Much of the pot-hunting was officially condoned. For example, the states of Colorado and Utah financed pot-hunters to make collections for their exhibits at the 1893 Chicago World's Fair (Harper's, 1954). The famed Wetherill brothers, "discoverers" of Mesa Verde, led recognized collecting expeditions in the Four Corners region from about 1890 onward (Jennings,

1968). In 1903, Prudden observed that much vandalism had already occurred to these same Anasazi sites (1903).

While the literature dealing with historic cultural material also reflects a concern for vandalism, a perusal of American Antiquity, the official journal of the Society for American Archaeology (SAA), was made for the purposes of illustrating the significance of vandalism to cultural resource professionals throughout a period of time. The issues of this journal, over its 40-plus years of publication, show that archaeologists have time and again encountered evidence of injurious vandalism in their pursuit of scientific knowledge. One of the first issues, in 1936, contained an article deploring the lack of a program in the United States to conserve prehistoric remains, for vandalism was already causing a tremendous loss. "From motives of mere curiosity or greed, dealers and relic hunters in practically every state are steadily destroying an irreplaceable heritage" (Setzler and Strong, 1936, p. 308).

Henry P. Sutton, a Seneca Indian, wrote a resolution in 1938 on behalf of the Indian Neighborhood Society of Rochester which urged the state of New York to enact legislation to prohibit unauthorized and non-professional digging of prehistoric sites. The society blamed relic hunters for the destruction taking place (Sutton, 1938). Hodge (1937) reported in American Antiquity an action taken by the Southwest Museum to prohibit the museum's acquisition of illegally obtained artifacts. This action was meant as a step toward snuffing out the market for such artifacts, museums being major buyers, as they are yet today.

In an article in a later volume of American Antiquity, Robert Ascher (1960) reviewed 10 years of Life magazine in an effort to determine what images the public might have of the profession of archaeology. From the articles in Life, he concluded that the public must believe that archaeological finds are based on chance, not skill, and that objects and techniques, not ideology, are most important. As a closing thought, Ascher asked, is pot-hunting a form of copying the profession? In the same volume, Byers (1960) reported the destruction in 1959 of an unusual burial site in Wayland, Massachusetts. Children, their parents, and even amateur archaeologists looted and destroyed the site in just minutes following its chance exposure.

In 1967, the Society for American Archaeology (SAA) presented an "Interim report of the Ad Hoc Committee on the Public Understanding of Archaeology" (SAA, 1967). The committee had been charged with the responsibility for studying means whereby public awareness of the discipline might be increased. Lack of understanding of what the discipline of archaeology is all about is surely one major cause of site destruction.

In the early 1970's, American Antiquity began to reflect a growing concern for illegal international trafficking in antiquities. The ready market for antiquities appeared to be causing a grand-scale desolation of prehistoric sites, particularly Mesoamerican sites. Adams (1971) wrote an editorial on this subject. The SAA (1971) adopted four resolutions to guide itself and its individual members in helping to bring an end to the trafficking. Beals (1971) suggested methods for controlling and limiting antiquity sales. Robertson (1972)

presented a lengthy article on Mesoamerican "stela stealing." Sheets (1973) summarized information on current looting of archaeological sites in Mesoamerica, North America, and the Mediterranean, and described a newly-originated form of destruction. Clewlow et al. (1971) cited examples of archaeologically-rich areas in the Great Basin of this country being decimated over a period of time by pot-hunters.

Located in the volumes of American Antiquity are, without a doubt, other references to vandalism which appear in the texts of technical reports of excavations and studies. Nonetheless, it is clear that professional archaeologists have long felt great concern for this cause of the loss of cultural information.⁵

This review of literature on vandalism, particularly cultural resource vandalism, indicates that vandalism has, for quite some time, been a very troubling matter bringing professional pain to archaeologists and hampering public enjoyment. Yet, there do not seem to exist any comprehensive, regionally-broad studies focusing on cultural resource vandalism. A good, general description of the problem is missing for virtually all but scattered sites and localized areas.

⁵ A recent expression of concern by an archaeologist has taken the form of a study on site destruction rates. Dr. Donald A. Graybill, of the University of Georgia, undertook this study. His findings were not received and thus could not be included in this paper.

CHAPTER III

METHODOLOGY

Development of Methodology

The use of a questionnaire survey seemed to contain the greatest potential for success in efficiently obtaining the bulk of the descriptive information required by the objectives of the study.⁶ Assuming the inclusion of all appropriate questions, a substantial quantity of information on vandalism could be secured which would represent a broad geographic area, a variety of cultural resource types, and a range of specific cultural resource vandalism problems. This chapter begins by discussing the development of the questionnaire. The questioning techniques and organization of questions are discussed next, along with a few minor shortcomings of the instrument. The selection of the type of respondent and the geographical area for the survey is brought up next. Lastly, the means of tabulating and analyzing the questionnaire are discussed.

A draft questionnaire was developed and pilot tested. Nineteen copies were sent or handed out with a cover letter to agency personnel with whom there was already some acquaintance. These individuals were

⁶The impetus for employing a questionnaire, and later, elements of its format, were borrowed from Petty (1966), who conducted a survey of vandalism to the facilities, sign and artifacts of National Forests and Parks. Petty did not, however, sufficiently focus on cultural resource vandalism to contribute a great deal to its understanding.

requested to complete the questionnaire and to comment specifically on its content, format, and wording. Eleven of the 19 questionnaires were either completed or substituted for by detailed cover letters. The review of the returned questionnaires and the comments were valuable in helping to eliminate problems in the instrument itself. Changes were made in the instrument after the pilot test and further review by appropriate Colorado State University faculty. The most significant modification made was to re-word several questions which were barriers to full completion of the questionnaire. These questions solicited factual data concerning vandals based on recorded incidents of cultural resource vandalism. It was found that either this kind of information did not exist, or that respondents were unable or unwilling to look it up in their files. These questions pertaining to vandals were re-phased so that it was permissible for a respondent to answer from the standpoint of his own impressions, providing he noted that he was doing so. It was felt that to receive numerous responses which were based on solid impressions was preferable to receiving only a few based on documented, factual information.

Following these changes, a new draft was developed and presented to Dr. Roberto Costales (Archaeologist, Division of Standards and Technology, BLM, Denver). His review resulted in the final questionnaire version (Appendix B).

Questionnaire

The six-page questionnaire relies upon several standard techniques: yes-no or check, rating scales, and open-ended questions. Open-ended

questions are more difficult to tabulate, but do not force the respondent to conform his thoughts to certain prescribed choices and wordings as do other techniques. The combination of these techniques ideally insures a more complete reflection of reality than the sole use of one.

Each of the 28 questions posed is designed to partially meet one of the study objectives. Questions 1 through 3 are preliminary in nature. They seek to establish that cultural resources are present within the management area under study, and that there is a vandalism problem with the cultural resource. Questions 4 through 6 and 13 through 23, which relate to characteristics of cultural resource vandalism, were asked for the purposes of Objective One. Questions 7 through 12, which seek information concerning control techniques, fall under Objective Two. Questions 24 through 28 ask for information which completes the requirements for making final recommendations, and thus they fit the purposes of Objective Three.

Respondents were not asked to give only documented, factual information, but could respond on the basis of their most accurate beliefs.

There were a few errors made during the construction of the final questionnaire version which may have influenced responses to certain of the questions. However, there was no indication in going over the data that serious misinterpretation by respondents had occurred. When deemed to have some importance, such limitations will be mentioned during the discussion of results. One error to be pointed out now concerns the two parallel lists of resource types under Question 1.

(See Appendix B.) Instead of "archaeological," the left list should have been headed by "prehistoric," and the right list should have been headed by "historic." Again, there was no indication that this error confused the respondents of the intent.

Distribution of Questionnaire

The questionnaire was sent to one employee of each basic management area⁷ of the National Park Service, United States Forest Service, and the Bureau of Land Management, and to selected employees of the Bureau of Reclamation and the Colorado Division of Parks and Outdoor Recreation, within the "core" geographical area: Idaho, Montana, North and South Dakota, Wyoming, Colorado, New Mexico, Arizona, and Utah. For the NPS, questionnaires were sent to Superintendents. For the USFS, questionnaires were sent primarily to Forest Supervisors, but in some cases to District Rangers or to designated cultural resource officials. For the BLM, questionnaires were sent to District Managers. For the BR, questionnaires were sent to staff archaeologists, and for the CDPOR, questionnaires were sent to park managers.

Field-level employees were chosen for their presumed greater familiarity with on-the-ground situations. The advantage of seeking the viewpoints of resource managers as opposed, for example, to professional, institutional archaeologists, is that by doing so one gains better coverage of the geographical area as a whole. Archaeologists, by contrast, would perhaps be able to offer more factual information, but it would be based to a greater extent on intensive

⁷ See Appendix E.

studies of scattered areas. This would not give the broad overview of vandalism throughout the region as desired. Also, it is probably safe to assume that the resource managers into whose hands the questionnaires were given to complete, already had an interest in, knowledge of, and concern for the cultural resources of their management areas.

As previously stated, each unit of the NPS, USFS, and BLM received one questionnaire. The one exception is for the Navajo Lands Group of monuments of the NPS. Three units among that group of eight were selected to be represented. This selection was made in cooperation with the Management Assistant of the Navajo Lands Group; it was not felt the other units contained a sufficient number of cultural resources to warrant being included in the survey. The General Superintendent of the Southern Arizona Group of the NPS was sent five questionnaires for his group of 12 monuments, the idea being that he would select the ones to be included in the survey. Instead, he took the initiative to provide all 12 units with a copy of the questionnaire, as well as to attach to each a memorandum requesting cooperation with the survey. The Supervisor of Apache-Sitgreaves National Forests had each district complete a copy of the questionnaire in place of a single response for the Forests as a whole. By these actions, it became possible for there to be more questionnaires returned than were sent out. Following is a breakdown of the numbers of questionnaires:

number sent out	164
number added by agency copying	12
additional ⁸	<u>2</u>
	178
number returned completed	164
return rate (164/178)	92 percent
number usable ⁹	160

If the number sent out figure is compared with the number returned, the response rate was actually 100 percent. Cooperation was indeed excellent. All agencies responded equally well.

There are several reasons why the Rocky Mountain West was selected as the study area: 1) I was most familiar with this region, having lived and traveled extensively in it for many years; 2) with Fort Collins as the base from which the research was conducted, it made sense to focus on the surrounding lands; 3) a line had to be drawn somewhere, as a survey of cultural resource vandalism across the United States would have been an awesome undertaking; 4) the core area at the present has heavy pressures upon it in the forms of rapidly increasing population, natural resource development, and recreational uses; and 5) a requirement of the Hill Fellowship,¹⁰ which I received, was that any project undertaken be directed to the Rocky Mountain region.

As mentioned in Chapter I, there was not complete coverage of dispersed recreation areas within the nine core states. This was due

⁸Two agency employees filled out questionnaires for areas not under their jurisdictions because of their familiarity with these areas. As one condition of the survey was that each respondent be an employee of the area represented, these two questionnaires could not be included in tabulation.

⁹In addition to the two questionnaires cited in footnote 8, two others were eliminated from tabulation due to problems of overlap.

¹⁰Administered through the College of Forestry and Natural Resources, Colorado State University.

partly to original intent and partly to events as the project developed. The primary representation by the three agencies is apt for the following reasons: 1) the NPS, USFS, and BLM control among them vast square miles of land in this region; 2) the land is largely natural in condition and appearance (one requisite for dispersed recreation areas); 3) the agencies cater, in varying degrees, to outdoor recreation; and 4) contained within their lands is a quantity and variety of cultural resources, and a diversity of settings, needed for an accurate assessment of vandalism to such resources.

Appendix D shows the states represented, the agencies responding for each state, and the total number of responses for each state. Appendix E shows the types, numbers and names of management areas responding by agency. Appendix F shows the positions held, and numbers of each, by agency for those employees actually completing the questionnaires.

Analysis

The SPSS system (Nie et al., Statistical Package for the Social Sciences, 1975) was used to tabulate the results. This is a straightforward computer program, which was chosen because it has suitable capabilities for the kind of data gathered.

A coding format that fit SPSS requirements was developed for the questionnaire. This resulted in there being 160 separate variables, each variable having one or more values (such as "yes" or "no"). Content analysis of the responses for the open-ended questions resulted in placing very similar responses into the same category which then became a single value (the question itself was one variable).

For open-ended questions, responses were not excessively forced into categories, but were frequently allowed to remain couched in their own phraseologies. This approach was unwieldly (for example, one variable had 36 separate values), but wise in that there was more accuracy of the respondent's intent; this way, not wholly similar responses could be lumped together at any point in the data analysis. Following the assignment to each value of an integer code, the data from each questionnaire were punched onto computer cards. A few open-ended questions were not machine tabulated. The contents of the responses were instead "manually" reviewed and analyzed.

There were a few instances in which two or more questionnaires referred to the same cultural resource base. For example, a Forest-level response and a District response for the same forest discussed the same cultural resources (though the Forest-level response would have included all districts). When this happened, only one response was allowable for tabulation for the following questions: 3,4,5,6,7, 8,9,21,22,23,25, and 26. It was believed that there should be no overlapping of responses for these questions.

The two SPSS procedures used were FREQUENCIES and CROSSTABS. FREQUENCIES was used to total up the number of occurrences of each value for all 160 "cases" (i.e., questionnaires) and of occurrences of selected values by "subfile" (i.e., by agency). The latter was done to determine what differences there might be among agencies for a particular response. Since the Bureau of Reclamation and Colorado Division of Parks and Outdoor Recreation had only a few responses, FREQUENCIES by subfile was done only for the NPS, USFS, and BLM.

CROSSTABS is a simple joint-frequency procedure which, as its name implies, can give the number of instances of the occurrence of one variable value with another variable value by case (i.e., by questionnaire). For example, if a respondent checked "yes" to question 10a, did he also check "yes" to question 10b, and how many times was this pattern repeated across all cases?

The use of simple (absolute) frequencies and adjusted percent frequencies is most appropriate for the objectives as well as the data gathered, and results are expressed in these terms.

Other Methods

Other methods were used in addition to the questionnaire survey to meet the objectives. Though not forming the central instrument, they are nevertheless essential ingredients in a study such as this. These other methods have already been alluded to: library research, correspondence and conversations, and the gaining of firsthand field experience with the problem of cultural resource vandalism.

CHAPTER IV

RESULTS

The results were derived from a population of 160. The sizes of the three main sub-populations were: 61 - National Park Service; 64 - U. S. Forest Service; and 31 - Bureau of Land Management.

Extent of Cultural Resource Vandalism

Questions 1 through 3 established that cultural resources were present within a management area, of which types they were, and how subject they were to vandalism.

Of the 160 cases, 157 respondents indicated that their areas contain cultural resources. Two respondents reported no cultural resources, and one response was missing. While this total response says nothing about how significant the cultural resources may be, it clearly indicates that cultural resources are indeed widespread throughout this region.

Table 1 gives the frequencies of the responses to the second part of Question 1 and to Question 2. These questions asked for the cultural resource types which were simply present within an area and also if they had been vandalized at some time (see Appendix B). The most numerous cultural resource types reported as existing, regardless of vandalism, were, in order: historic buildings of all construction types; open camp sites or chipping stations; log buildings; rock

Table 1. Cultural Resource Types and Reported Vandalism.

	Existing with No Vandalism Reported	Existing with Vandalism Reported	Total Existing	Percent Vandalized
<u>Prehistoric</u> ¹				
Open camp sites or chipping stations	30	84	114	74%
Tipi rings	24	21	45	47%
Rock shelters or caves	20	70	90	78%
Kill sites or buffalo jumps	11	13	24	54%
Ceremonial sites or structures	16	31	47	66%
Stone or adobe-walled dwellings	15	49	64	77%
Rock art	17	69	86	80%
Wickiups or standing tipi poles	7	10	17	59%
Agriculture-related structures	19	13	32	41%
<u>Historic</u> ¹				
Ranching structures	32	51	83	61%
Historic buildings				
log	32	60	92	65%
frame	23	37	60	62%
masonry	20	32	52	62%
Historic buildings of all types	75	131	206	64%
Roads, trails	63	22	85	26%
Battlefields	9	17	26	65%
Bridges	17	6	23	26%
Building ruins	17	50	67	75%
Railroad structures	18	22	40	55%
Mining structures	25	44	69	64%
Root cellars	19	10	29	34%
Kilns	10	11	21	52%
Ditches	34	7	41	17%

¹While the heading above the first list under Question 1 reads "archaeological," and the second (right) list has no heading, the intent was to divide resource types into "prehistoric" and "historic." This has been done for Table 1.

Table 1.--Continued.

	Existing with No		Existing with		Total	Percent
	Vandalism Reported	Vandalism Reported	Vandalism Reported	Existing		
<u>Prehistoric (written in by respondents)</u>						
Trails	0		2	2	2	100%
Surface artifacts	0		3	3	3	100%
Navajo hogans	0		1	1	1	100%
Sleeping circles	1		1	1	2	50%
Burial and cremation sites	2		3	3	5	60%
Hearth sites	0		2	2	2	100%
Pithouse sites	1		1	1	2	50%
Roasting pits	0		2	2	2	100%
Conical pole structure	1		0	0	1	0%
Rock alignments, rock hunting blinds	2		2	2	4	50%
Quarry sites	2		0	0	2	0%
Fishing village	0		1	1	1	100%
Below-surface site	1		0	0	1	0%
Sheep traps	2		0	0	2	0%
Hohokam archaeological site	0		1	1	1	100%
Miscellaneous - (mescal pits,burnt ring middens)	4		1	1	5	20%
<u>Historic (written in by respondents)</u>						
Artifacts as scatter, including trash dumps	1		2	2	3	67%
Artifacts as furnishings			2	2	2	100%
Graves, grave markers, cemeteries	1		4	4	5	80%
Paleontological (petrified wood, fossils)	1		3	3	4	75%
Masonry walls			1	1	1	100%
Military and trading posts and sites	2		4	4	6	67%
Earthworks	1				1	0%
Massive sculpture	1				1	0%
Cable works	1				1	0%
Logging structures, tie flumes	2		3	3	5	60%

Table 1.--Continued.

Historic (written in by respondents)--Cont.	Existing with No		Existing with		Total	
	Vandalism Reported		Vandalism Reported		Existing	Percent Vandalized
Sawmills	1		1		2	50%
Wagon wheel ruts	1				1	0%
Inscriptions in stone	1		2		3	67%
Ghost towns	1		1		2	50%
Gold mill			1		1	100%
Civilian Conservation Corps Camp			1		1	0%
Rock cairn	1					0%
Dam			1		1	100%

shelters or caves; rock art; roads and trails; and ranching structures. Other types found in relative abundance were: mining structures; building ruins; stone or adobe-walled dwellings; and frame buildings. Types written in by respondents were varied but occurred with relatively low frequencies.

Vandalism was reported for every resource type listed under Question 1. Furthermore, for most of these types, the percentage of the total reported as existing (whether vandalized or not) which had been vandalized exceeded 50 percent. To summarize from Table 1, the resource types with the highest proportion of reported vandalism were:

	percent vandalized
1. rock art	80%
2. rock shelters or caves	78%
3. stone or adobe-walled dwellings	77%
4. building ruins	75%
5. open camp sites or chipping stations	74%
6. ceremonial sites or structures	66%
7. log buildings	65%
8. battlefields	65%
9. all buildings	64%
10. mining structures	64%

Question 3 asked the respondent to select two cultural resource types that, in his or her opinion, were most subject to vandalism in the management area. Each of the code letters, "A" and "B," became identified with the respective resource type identified by the respondent, and this labeling held for the remainder of the questionnaire. Identification of resource types as "A" and "B" was therefore synonymous with those resource types being claimed as the most subject to vandalism within a particular management area.

Table 2 shows the frequencies of resource types identified by the respondent as either "A" or "B." Clearly, a few resource types were

Table 2. Resource Types Most Subject to Vandalism.

Resource Type	Absolute Frequency	Percent Frequency (N=160)
Rock art	41	26%
Open camp sites or chipping stations	37	23%
Stone or adobe-walled dwellings	34	21%
Historic buildings of all types	34	21%
Rock shelters or caves	27	17%
Mining structures	18	11%
Building ruins	15	9%
Historic buildings of unspecified construction mode	15	9%
Historic buildings - log	10	6%
Ranching structures	6	4%
Historic buildings - masonry	5	3%
Historic buildings - frame	4	3%
Ceremonial sites or structures	3	2%
Granaries or storage cists	3	2%
Wickiups or standing tipi poles	3	2%
Historic roads, trails	3	2%
Historic artifacts as furnishings	3	2%
Paleontological (petrified wood, fossils)	3	2%
Kill sites or buffalo jumps	2	1%
Historic graves, grave markers, cemeteries	2	1%
Logging structures, tie flumes	2	1%
Historic inscriptions in stone	2	1%
Prehistoric surface artifacts	2	1%
Prehistoric burial or crematory sites	2	1%
Hokokam archaeological site	2	1%
Agriculture-related structures	1	1%
Kilns (lime, charcoal	1	1%
Historic artifacts as scatter, including trash dumps	1	1%
Historic masonry walls	1	1%
Historic military and trading posts and sites	1	1%
Sawmills	1	1%
Ghost towns	1	1%
Prehistoric hearth sites	1	1%
Prehistoric rock-walled forts or observation points	1	1%
Prehistoric rock alignments, rock hunting blinds	1	1%
Prehistoric fishing village	1	1%
Prehistoric midden	1	1%

written down by respondents much more frequently. To summarize from Table 2, these resource types are, in rank order:

1. rock art
2. Open camp sites or chipping stations
3. stone or adobe-walled dwellings
historic buildings of all types (also ranked #3)
4. rock shelters or caves
5. mining structures
6. building ruins
7. log buildings
8. ranching structures
9. masonry buildings
10. frame buildings

It is interesting to compare this listing with the one given previously. While the rank orders are not identical, the two listings are very similar. It is noteworthy that heading both listings are prehistoric resource types, and that rock art (i.e., pictographs and petroglyphs) is ranked first in both.

The provision for identifying resource types with "A" and "B" was made so that the respondent could, at his own discretion, select out two resource types whose associated problems of vandalism could be looked into at some depth via succeeding questions. It was a means of limiting the scope of resource types to a much more manageable size for each response. "A" and "B" provided a simple way of following the two identified resource types through the first portion of each questionnaire.

With Question 3 there was a possibility of the respondents misinterpreting the request to write down resource types which they believe are receiving much vandalism; "subject to" could possibly mean "threatened but not yet being vandalized." However, only in one instance (Mount Rushmore National Memorial) was it apparent that there was a misinterpretation. Question 4 responses are, in a sense, a check

on Question 3 responses, because actual forms of vandalism are asked to be described in this latter question.

For the purposes of convenience and in-depth study, the 11 resource types most subject to vandalism (from Table 2, and equivalent to the listing of a few paragraphs previous) were selected to be analyzed for their vandalism problems. There would appear to be sufficient variety among these types such that a clear picture of vandalism to all cultural resources can be developed. The resource type, granaries or storage cists, while occurring in place "A" or "B" less frequently than the 11 types, has been included in the analysis as it could have been identified with stone or adobe-walled dwellings in the minds of some respondents. This latter type (stone or adobe-walled dwellings), incidentally, was broadened in meaning to encompass similar types, such as prehistoric village sites and Pueblo culture ruins, which were written down by some respondents for Question 3. Also, a new resource type, "historic buildings of unspecified construction mode," was formed because a number of respondents did not specify the construction mode when identifying historic buildings as "A" or "B." The three main historic building construction modes - log, frame, and masonry - were kept as separate resource types during the reporting of results, but were lumped together, along with the unspecified construction type, to form a new category, "historic buildings of all types." By this means, a picture of vandalism problems to all historic buildings can become clear. "Lime kilns" was changed simply to "kilns," so that charcoal kilns could be included under this type.

There were some differences in ranking of the 12 selected resource types when tabulated by agency. Table 3 compares the rank ordering of frequencies of types by agency.

Crosstabulation of resource types most subject to vandalism with sub-regions of the Rocky Mountain West showed there were minor differences in the responses among these sub-regions. These differences are shown in Table 4.

The resource types most subject to vandalism by management area are shown in Table 5. Results indicate that there were some differences in resource types being vandalized in, for example, a National Park as compared with a National Forest. Management areas were lumped to some extent for the purpose of analysis.

Davis (1972) was one of the few writers to have made a broad statement on cultural resource types which are being vandalized most commonly. She wrote: "In undeveloped areas, prime targets of vandalism are rock carvings and paintings" (p. 270). She could not have been more accurate according to the findings of this study.

Characteristics of Cultural Resource Vandalism

The characteristics of vandalism for which data were obtained include: the forms the vandalism takes; how detrimental the forms are; factors causing resources to be vulnerable; patterns and trends of occurrence; and attributes of the persons doing the vandalism. The questions referred to are numbers 4 through 6 and 13 through 23.

Table 3. Comparison of Rank Ordering by Agency of Resource Types Most Subject to Vandalism.

Resource Type	All Cases	Agency		
		NPS	USFS	BLM
Rock art	1	2	3	1
Open camp sites or chipping stations	2	3	1	3
Stone or adobe-walled dwellings	3	1	2	5
Historic buildings of all types	3	2-3	3	3-4
Rock shelters or caves	4	3	4	2
Mining structures	5	-	2	-
Building ruins	6	4	4	-
Historic buildings of unspecified construction mode	6	-	5	4
Historic buildings - log	7	5	6	-
Ranching structures	8	-	7	-
Historic buildings - masonry	9	-	5	5
Historic buildings - frame	10	6	-	-

Table 4. Resource Types Most Subject to Vandalism by Sub-regions of the Rocky Mountain West.¹

Southwest and Intermountain ²	Mountain ³	Plains ⁴
Stone or adobe-walled dwellings	Open camp sites or chipping stations	Open camp sites or chipping stations
Rock art	Historic buildings	Historic buildings
Rock shelters or caves	Rock shelters or caves	Historic buildings
Open camp sites or chipping stations	Rock art	Building ruins
Historic buildings	Mining structures	Mining structures

¹Listed in rank order of frequency.

²Arizona, New Mexico, Utah, Texas, Oklahoma, California, Nevada.

³Colorado, Idaho, Wyoming, Montana.

⁴North Dakota, South Dakota, Nebraska.

Table 5. Resource Types Most Subject to Vandalism by Management Area.

Management Area	Resource types most subject to vandalism, by rank order of frequency
National Park, Parkway, Memorial and Memorial Park	Rock art Stone or adobe-walled dwellings Building ruins
National Monument, Cemetery	Stone or adobe-walled dwellings Historic buildings Rock art, open camp sites and chipping stations
National Historic Site, Battlefield, Historic Park	Historic buildings
National Recreation Area	Rock art
National Forest, Forest Ranger District	Open camp sites or chipping stations Mining structures Stone or adobe-walled dwellings Rock art, historic buildings Rock shelters or caves
National Grassland	Open camp sites or chipping stations
BLM District, Resource Area	Rock art Rock shelters or caves Open camp sites or chipping stations Historic buildings Stone or adobe-walled dwellings
Colorado State Recreation Area	Rock art, log buildings
Bureau of Reclamation Region, Project Area	Rock art Stone or adobe-walled dwellings, open campsites or chipping stations, wickiups or standing tipi poles, historic buildings

Forms of Vandalism

Table 6 shows the forms of vandalism indicated by respondents. Considering all resource types, the most common forms of vandalism were: excavation; defacement; surface collecting; removing boards and timbers; shooting, removing, painting, and chalking rock art; and theft of objects from buildings.

Generally a respondent wrote down more than one form of vandalism per resource type (which he identified as either "A" or "B"). Consequently, there were 362 responses which were grouped as 26 separate forms of vandalism.

The respondent also was asked to rate how detrimental the form of vandalism was in his opinion. Table 7 gives these results. Where there were two or more forms of vandalism written in per resource type, the rating probably refers to how detrimental that combination of forms was to the preservation of the resource. In any case, the results show that stripping boards, excavation, shooting at rock art, general defacement, and surface collecting were most often considered to be "very detrimental."

Table 8 shows the specific forms of vandalism indicated by respondents for the 12 selected resource types (i.e., those most subject to vandalism as given in Table 2). We can see that for open camp sites or chipping stations surface collection is the major abuse. For rock shelters and caves, excavation was the form most frequently reported. This form of vandalism was also the most commonly indicated for stone or adobe-walled dwellings. Rock art was shown to be damaged in approximately equal frequency by general defacement, removal,

Table 6. Forms of Vandalism.

Form of Vandalism	Absolute Frequency	Percent Frequency
Excavation (digging, pothunting, use of heavy equipment)	82	23.0%
Carving, scratching, chipping, general defacement*	51	14.0%
Surface collecting of artifacts (especially lithic materials)	50	14.0%
Removing part or all of structure, stripping boards and timbers, using as firewood*	48	13.0%
Removing, shooting at, painting, chalking, making casts and tracings of rock art*	45	12.0%
Theft of artifacts from structures	30	8.2%
General defacement (including chipping)	26	7.0%
Carving, scratching	25	7.0%
Stripping weathered boards or other timbers	24	7.0%
Removing part or all of a structure or causing structural damage	21	6.0%
Shooting (primarily at rock art)	19	5.0%
Removing rock art	15	4.0%
Dismantling, general destruction of structure (but apparently no removal)	12	3.0%
Painting or chalking rock art	10	3.0%
Arson	9	2.5%
Climbing or walking on resources	7	2.0%
Building new roads over, using modern vehicles upon historic roads, off-road recreational vehicle (ORRV) use	6	2.0%
Re-arrangement of, re-locating resources	5	1.0%
Breaking artifacts, objects, windows	5	1.0%
Breaking and entering	4	1.0%
Knocking structure over	4	1.0%
Use as firewood	3	0.8%
Use of heavy (construction?) machinery	2	0.6%
Throwing rocks into excavated ruin	1	0.3%
Making casts, tracings of rock art	1	0.3%
Handling, touching	1	0.3%
Totals	362	100.0%

*These forms are combinations of several other related forms which are listed elsewhere in the table. Their frequencies and percentages are not therefore included in the totals at the bottom of the columns.

Table 7. Degree of Detriment Caused Cultural Resources by Each Form of Vandalism.¹

Form of Vandalism	Very Detrimental			Moderately Detrimental			Not Detrimental		
	Absolute Frequency	Row %	Frequency	Absolute Frequency	Row %	Frequency	Absolute Frequency	Row %	Total
Surface collecting	26	62%		13	31%		3	7%	100%
Excavation	63	83%		12	16%		1	1%	100%
Carving	11	58%		8	42%				100%
General defacement	11	69%		5	31%				100%
Removal of rock art	8	80%		2	20%				100%
Shooting rock art	12	75%		4	25%				100%
Painting, chalking	3	50%		3	50%				100%
Removal of structure	7	54%		6	46%				100%
Dismantling of structure	4	57%		3	43%				100%
Knocking structure over	2	100%							100%
Strip boards	17	85%		3	15%				100%
Use as firewood	2	100%							100%
Theft	3	14%		17	81%		1	5%	100%
Handling, touching				1	100%				100%
Breaking artifacts				1	100%				100%
Climbing, walking on resources	1	17%		5	83%				100%
Breaking and entering	3	100%							100%
Arson	2	100%							100%
Rearrangement of resources	1	50%		1	50%				100%
Building new roads over	1	100%							100%
Modern vehicles on road	1	100%							100%
ORRV use	2	67%		1	33%				100%
Throwing rocks into ruin				1	100%				100%
Rock art casts, tracings				1	100%				100%
Construction machinery used	1	50%		1	50%				100%

¹See Table 6 for complete descriptions of vandalism forms.

Table 8. Forms of Vandalism for Selected Resource Types.

Form of Vandalism	Open camp sites or chipping stations	Rock shelters or caves	Granaries or storage cists	Stone or adobe-walled dwellings	Rock art	Ranching structures	Historic buildings of unspecified construction mode	Historic buildings - log frame	Historic buildings - masonry	Building ruins	Mining structures
Surface collecting	30 ²	3		3	2					1	
Excavation	13	23	2	21	1		3		1	3	1
Carving		2		2	16		1	1	1	1	
General defacement			1	5	13		1		2	2	
Removal of rock art					15						
Shooting					16		2			1	
Painting, chalking					9						
Removal of structure		1		3		2	3		1	3	3
Dismantling of structure		1				1	2		1	1	4
Knocking structure over				2		2	7			2	8
Stripping boards						2	3		2	1	
Use as firewood						1				5	8
Theft											
Breaking artifacts		2				1	1				
Climbing, walking on resources		1		3	1	1	2				
Breaking and entering						1	1				
Arson											
Rearrangement of resources	2						1			1	2
ORRV use	1						1			1	1
Rock art casts, tracings					1						
Construction machinery	1										
Throwing rocks into ruin				1							

¹ See Table 6 for complete descriptions of vandalism forms.² Expressed in absolute frequency.

shooting, and painting and chalking. Forms of vandalism to the other selected resource types are also given in the table.

Dr. Haury of the Arizona State Museum was quoted in the Topeka Capital Journal (1975) as saying vandals were using shovels, bulldozers, and backhoes to dig burials in Arizona. The article also mentioned motorcycle abuse and removal of rock art as other prevalent forms of vandalism in that area. The Bureau of Reclamation (1975) report on the archaeological survey of the Orme Reservoir project made the statement that vehicle movement and collecting by amateurs were two great means whereby damage was done to prehistoric occupation sites. Peter J. Pilles (1976), archaeologist for the Coconino National Forest (Arizona) and one of the survey respondents, wrote of his area: "Most site classes" (i.e., resource types) "have been subjected to some pot-hunting but by far the most damage has been done to the large pueblos and the 5 to 15-room pueblos with trash mounds, obviously because of the greater number of burials and loot they contain. . . In the south half (of the Forest) almost every single large pueblo and cliff dwelling has been seriously disturbed. . . The Clear Creek Ruin. . . is estimated to have contained about 250 small caves, 90 percent of which have been potted. In fact, I would guess that 80 percent of all cave sites in the Verde (Valley) have been potted to some degree." He continued: "Malicious vandalism is only apparent at rock art sites and standing cabins. . . name writing/scratching is the main destruction. Many of the pictograph sites have been altered by people adding to or outlining pictographs with chalk and charcoal in order to enhance them for photography. I would guess that 80 percent of the pictograph

sites in the Verde have been damaged to some degree by this activity. Shooting at glyphs is only a minor problem, although in other parts of Arizona it is more severe." A portion of a report on vandalism sent in by the Socorro (New Mexico) District of the BLM stated: "Vandalism has left gaping undercut holes in the walls and fills of the pueblos" (Wiseman, 1974, p. 13).

Petty (1966) found that his NPS respondents considered artifact, natural formation, and vegetation theft to be a major form of vandalism in their areas.

Martin (1959) classified vandalism acts he studied in the Borough of the Bronx as: 1) predatory (for example, theft); 2) vindictive (expressive); and 3) wanton (excitement one motive). Harrison (1976) classified vandalism into three types: 1) erosive (thoughtlessness or ignorance); 2) fun (destructive play); and 3) vindictive (due to overly-long dependence of youth on adults). The forms of vandalism to cultural resources would indicate that cultural resource vandalism certainly contains elements of vandalism in its usual wanton, destructive sense, but also that cultural resource vandalism tends to be more "specialized." "Predatory" in Martin's classification, and "erosive" and "fun" in Harrison's schemes are probably most apt for cultural resource vandalism. These terms are explanatory as well as descriptive.

The forms of vandalism noted in this study appear to be in line with what others have written concerning forms of cultural resource vandalism.

In the case of estimates of the damage caused to the integrity of a cultural resource by a particular form of vandalism, there was less

found in the literature. One survey respondent, however, illustrated how one form of vandalism--surface collecting--can be detrimental:

" . . . we are losing a tremendous amount of material due to surface collectors working open lithic sites (camps, flaking sites, whatever). The problem I run into here is that sites have been picked so clean that diagnostic projectile points are almost always gone" (Cedar City BLM District, Utah).

Table 9 indicates that for all resource types considered as a whole, the form(s) of vandalism employed is generally the same for any one type. That is, "there is method in the vandalism madness"; it is typically systematic, and not haphazard in its approach. Table 10 shows that this finding is true, too, for the 12 types most subject to vandalism, particularly the following: open camp sites or chipping stations, rock shelters or caves, stone or adobe-walled dwellings, rock art, and historic buildings.

The purpose behind posing a question to ask if the form of vandalism was the same for most occurrences was to attempt to substantiate a prior belief that, unlike vandalism in the traditional sense, forms of cultural resource vandalism are appreciably more thought out ahead of time. For example, the Crime Prevention Section of the Los Angeles Police Department reported that vandalism is usually not pre-planned (Department of Recreation and Parks, City of Los Angeles, 1971). As the data from Tables 9 and 10, and Table 8, discussed earlier, indicate that a certain form or forms predominate for any resource type, we can conclude that cultural resource vandalism is often systematic in the forms it takes. This conclusion would suggest that there may be an element of pre-planning involved also.

Table 9. Responses, for All Resource Types, to the Question: Is the form of vandalism the same for most occurrences?

Response	Absolute Frequency	Percent Frequency
Yes	233	91%
No	<u>24</u>	<u>9%</u>
Totals	257	100%

Table 10. Responses, for Selected Resource Types, to the Question:
Is the form of vandalism the same for most occurrences?

Resource Type	Yes Absolute Frequency	No Absolute Frequency	Yes Percent Frequency
Open camp sites or chipping stations	36	1	97%
Rock shelters or caves	27	0	100%
Granaries or storage cists	2	0	100%
Stone or adobe-walled dwellings	29	5	85%
Rock art	34	6	85%
Ranching structures	4	1	80%
Historic buildings of unspecified construction mode	13	2	87%
Historic buildings - log	9	1	90%
Historic buildings - frame	1	0	100%
Historic buildings - masonry	2	1	67%
Building ruins	13	2	87%
Mining structures	<u>16</u>	<u>2</u>	89%
Totals	186	21	

Pilles (1976) illustrated for the resource type, stone or adobe-walled dwellings: "There is a definite pattern with respect to pot hunters' destruction of the pueblos. They first concentrate on the trash/burial areas until the burials are pretty much wiped out. Then their attentions are turned to the pueblo itself, unless the burials are initially found to be within the rooms, in which case the pueblo is wiped out."

Vulnerability Factors

Table 11 provides the frequencies of all factors--both those printed on the questionnaire and those written in by respondents--considered to cause cultural resource types to be vulnerable to vandalism. Sixty percent of all respondents believed that people seek out the resource. The implication intended by the questionnaire was that people seek out a resource because of its having some kind of attraction for them (e.g., collection or market values of artifacts). Nearly as many, 56 percent, believed that evidence of previous vandalism was also a reason for the vulnerability of a cultural resource. Weathering as a factor in attracting the potential vandal and locations in areas of concentrated visitor use were also considered important, but to a slightly lesser extent. Two other factors were written in frequently by the respondents: the value of the resource (to a person's collection or on the market), this being related to the seeking out factor; and the fact of limited law enforcement patrol.

In crosstabulating the vulnerability factors indicated with the 12 resource types, it was determined which factor(s) was most pertinent to each of the resource types. Table 12 summarizes these data.

Table 11. Vulnerability Factors Affecting Vandalism to All Resource Types.

Vulnerability Factor	Absolute Frequency	Percent Frequency (N=160)
Resource located in area of concentrated visitor use	72	45%
Resource is well-known, and people seek it out	96	60%
Resource is obviously deteriorating due to natural weathering	70	44%
Resource has obviously been vandalized previously	89	56%
<u>Written in By Respondents:</u>		
Wide distribution of resource	4	2.5%
Accessibility of resource	3	1.9%
Value to person or market value	13	8%
Remote locations	12	8%
No physical protective barrier or present barrier insufficient	2	1.3%
Increase in levels of ORRV use and outdoor recreation in general	3	1.9%
Collecting is popular hobby among local people	1	0.2%
Need for building materials or firewood by local people	2	1.3%
Lack of understanding of applicable laws by visitor	1	0.2%
"Eye appeal" or resource is clearly obvious	2	1.3%
Appropriateness as modern campsite	1	0.2%
Vandalism brought about by persons entering area for other purposes (e.g., hunting, army maneuvers)	2	1.3%
Destructive tendencies of people	<u>1</u>	0.2%
Total	374	

Table 12. Vulnerability Factors Affecting Vandalism to Selected Resource Types.

Resource Type	Vulnerability Factor										Totals	
	Located in area of concentrated visitor use	Resource is well-known and people seek it out	Resource is obviously deteriorating due to natural causes	Resource has obviously been vandalized previously	Factors written in by respondents ¹	Percent	n for each resource type					
Open camp sites or chipping stations	22%	35%	7%	20%	16%	100%	69					
Rock shelters or caves	15%	38%	4%	26%	17%	100%	53					
Granaries or storage cists	20%	20%	0	20%	40%	100%	5					
Stone or adobe-walled dwellings	22%	30%	13%	20%	15%	100%	83					
Rock art	21%	24%	15%	24%	16%	100%	87					
Ranching structures	8%	23%	31%	23%	15%	100%	13					
Historic buildings of unspecified construction mode	21%	19%	26%	26%	8%	100%	47					
Historic buildings - log	6%	25%	44%	25%	0	100%	16					
Historic buildings - frame	0	0	50%	50%	0	100%	2					
Historic buildings - masonry	29%	29%	0	29%	13%	100%	7					
Building ruins	14%	17%	29%	31%	9%	100%	35					
Mining structures	20%	22%	22%	30%	6%	100%	54					
Historic buildings of all types	18%	21%	28%	26%	7%	100%	72					
All resource types	20%	28%	16%	25%	11%	100%	555 ²					

¹ See Table 11 for a breakdown of these factors.

² n for all resource types.

Some reason of attractiveness, which causes the potential vandal to seek out the resource, was the most common factor checked for the following: open camp sites or chipping stations, rock shelters or caves, stone or adobe-walled dwellings, and rock art. For the 12 types of resources taken as a whole, seeking-out exceeded all other factors in frequency. Weathering was most important for ranching structures, building ruins, and all historic buildings. Evidence of previous vandalism as a factor was cited frequently for rock art, building ruins, mining structures, and all historic buildings. The resource value factor, which was written in by some respondents, was important for rock shelters or caves, and stone and adobe-walled dwellings (implying that artifacts which were surface collected or excavated from these areas had value to the vandal). For the 12 resource types, the factor of being located in an area of concentrated visitor use was also considered important in affecting vulnerability.

The findings of this study that location in heavy visitor use areas, natural weathering, and evidence of previous vandalism probably affect the incidence of vandalism are supported by other writers. Much especially has been written of the importance of maintaining and promptly repairing facilities to reduce vulnerability to vandalism. Harrison (1976), for example, stressed this. Such maintenance and repair presumably refers to damage caused both by vandalism and by weathering forces.

Time of Occurrence

In contrast to finding that forms of vandalism used appear to be rather dependent upon the resource type vandalized (Tables 9 and 10),

Table 13 indicates that there is probably no particular pattern for when vandalism occurs. That is, vandalism is probably not taking place any more on the weekends than during the week, or during the Fourth of July holiday than non-holiday periods. Table 14 gives the frequencies of responses for the 12 selected resource types. A time of occurrence element does seem to be involved for these resource types: historic buildings of unspecified construction mode, ranching structures, and open camp sites or chipping stations. However, the percentage of respondents believing that vandalism occurrences were dependent on the day of the week, the season of the year, holidays, etc., is low enough for even data about these resource types to be inconclusive.

As one respondent pointed out, this question might have been beneficially expanded to show separate responses for day of the week, season of the year, and holidays. Many of the remote areas of the participating management areas are inaccessible during the winter, and vandalism during such periods naturally ceases. Some respondents perhaps could have answered both "yes" and "no" due to how the question was phrased. Yet despite the moderating effect on the results by respondents having to put "yes" because vandalism occurrences in their areas do depend on the season of the year, the "no" response is sufficiently strong to suggest that cultural resource vandalism cannot be easily pinned down in terms of the time element. Pillis (1976) offered an explanation: "At one time I felt that most pot-hunting took place on weekends and holidays; however, I'm not so sure now. We've been monitoring a few sites and so far it appears that visitation occurs as much during the week as on weekends. I suspect that

Table 13. Responses, for All Resource Types, to the Question: Do vandalism occurrences seem to depend on the day of the week, the season of the year, holidays, etc.?

Response	Absolute Frequency	Percent Frequency
Yes	118	53%
No	105	47%
(left blank)	<u>97</u>	<u>—</u>
Totals	320	100%

Table 14. Responses, for Selected Resource Types, to the Question:
Do Vandalism occurrences seem to depend on the day of the
week, the season of the year, holidays, etc.?

Resource Type	Yes Absolute Frequency	No Absolute Frequency	Yes Percent Frequency
Open camp sites or chipping stations	21	13	62%
Rock shelters or caves	11	12	48%
Granaries or storage cists	1	1	50%
Stone or adobe-walled dwellings	12	17	41%
Rock art	14	13	52%
Ranching structures	2	1	67%
Historic buildings of unspecified construction mode	9	4	69%
Historic buildings - log	4	6	40%
Historic buildings - frame	2	0	100%
Historic buildings - masonry	1	2	33%
Building ruins	6	8	43%
Mining structures	8	8	50%

professional pot-hunters probably work during the week and the casual pot-hunters more on the weekends." If true, then this is in contrast to Harrison (1976), who believed vandalism is dependent on the time of the week and special occasions.

Characteristics of Vandals

Seven questions were asked which specifically sought information on what some of the attributes of vandals of cultural resources might be. Respondents were permitted to rely upon their best beliefs as well as, of course, factual data if and when it was available to them. A question was asked to determine how many of the responses to these seven questions were based on actual incidents and how many were based on general impressions. Table 15 shows that the large majority of respondents gave answers based on their general impressions and not on recorded actual incidents involving vandals. A number relied on both sources of information: It would appear that the BLM may have had somewhat more factual data available on this matter than the other agencies, or if not, BLM respondents took the time to look it up among what information they did have.

Table 16 gives the results for the question relating to the age of vandals. While nearly half of the respondents checked "unknown," those who did indicate at least one age group (checking more than one age group was allowable) chose the "over 30" bracket 48 percent of the time. The second most frequent choice was "14 to 21," having a 31 percent frequency response for those selecting some age bracket. Nineteen percent of those selecting some age group indicated "22 to 29" years of age.

Table 15. Basis of Answering Questions Relating to Characteristics of Vandals.

Basis	All Cases			NPS			USFS			BLM		
	Absolute Frequency	Percent Frequency		Absolute Frequency	Percent Frequency		Absolute Frequency	Percent Frequency		Absolute Frequency	Percent Frequency	
Actual incidents	29	20.3%		11	23.4%		11	18.0%		6	19.4%	
General impressions	82	57.3%		26	55.3%		40	65.6%		13	41.9%	
Actual and general	32	22.4%		10	21.3%		10	16.4%		12	38.7%	
(blank)	17	-		14	-		3	-		0	-	
Totals	160	100.0%		61	100.0%		64	100.0%		31	100.0%	

Table 16. Vandal Age Groups.

Age (years)	Absolute Frequency	Percent Frequency
under 14	2	2%
14-21	29	31%
22-29	18	19%
over 30	46	48%
Unknown	<u>84</u>	<u>-</u>
Totals	179	100.0%

Responsibility for acts of vandalism has typically been ascribed to the youth. For example, the Los Angeles Police Department reported that vandalism was usually caused by juveniles ranging in age between 9 to 14 years old (Department of Recreation and Parks, City of Los Angeles, 1971). Petty (1966) found that 80 percent of his survey respondents believed that individuals of 14 to 21 years of age were causing vandalism in National Forests and Parks. Clark, Hendee, and Campbell (1971) unexpectedly found that teenagers did not commit a disproportionately greater number of depreciative acts in a campground setting. Apparently, the researchers expected this age group to be most to blame. In fact, they discovered children and adults to have large shares in vandalistic acts.

It is essential to stress that only half of all respondents indicated any age group choice. As one respondent wrote: "In most cases the first time the archaeologist knows about a vandalism incident occurs after the fact. Therefore, reliable inferences regarding the age, sex, and numbers of individuals participating in the activity are nearly impossible to draw" (Shoshone BLM District, Idaho). He did go on to say that known cases of vandalism have involved middle-aged and older males. Another respondent claimed he had insufficient statistics, but "would suspect the dedicated older local "pothunter" with knowhow can most effectively clean a site" (Sawtooth National Forest, Idaho). The findings of this study are important in identifying an older age group (i.e., over 30) as responsible for much of cultural resource vandalism. By inference this result makes it possible to ascribe certain characteristics to the activity itself, such that it is probably not greatly due to youthful exuberance or spontaneity.

As Table 17 indicates, most respondents believed that vandals act together, in groups. This is true, too, for each of the three agencies taken individually, but most true for the NPS. Some respondents indicated they believed vandals act both in groups and alone.

For all cases, the frequency of the "unknown" response, together with that for no response at all to this question, was 62, or 39 percent. A fairly high percentage, then, was not willing to make a decision between "alone" and "groups."

The questionnaire contained no place to indicate the size of groups the respondent believed them to generally be, but Pilles (1976) wrote: "From the distribution and extent of pot holes, it appears that 1-2 people is the most common group size. Only rarely does it appear to be 4-5 people." The Shoshone BLM District respondent described the size as two to three when there was more than one individual. My own impression after viewing a badly dug-up area of ground adjacent to an Anasazi Pueblo ruin in Utah was that at least two individuals had spent about half a day digging with a couple of shovels.

The finding of vandalism as a group activity is consistent with Petty's (1966) result. In his study, respondents were unanimous in identifying vandalism as a group, not individual, pursuit. Perhaps, despite differing motives and circumstances, vandals feel most comfortable being in groups.

Table 18 provides the data on the sex of vandals, for all cases, and for the NPS, USFS, and BLM separately. By a very great margin, respondents believed vandals tend to be males. Forty-four of all respondents checked "males"; only one checked "females"; and 12

Table 17. Responses to the Question: Do you believe the vandals in your area tend to act alone or in groups?

Response	All Cases			NPS			USFS			BLM		
	Absolute Frequency	Percent Frequency		Absolute Frequency	Percent Frequency		Absolute Frequency	Percent Frequency		Absolute Frequency	Percent Frequency	
Alone	23	23.5%		4	12.5%		15	36.6%		3	13.6%	
In groups	66	67.3%		26	81.2%		23	56.1%		15	68.2%	
Both alone and in groups	9	9.2%		2	6.3%		3	7.3%		4	18.2%	
Unknown	47	-		17	-		20	-		9	-	
Totals	145	100.0%		49	100.0%		61	100.0%		31	100.0%	

Table 18. Sex of Vandals.

Sex	All Cases			NPS			USFS			BLM		
	Absolute Frequency	Percent Frequency	Absolute Frequency	Absolute Frequency	Percent Frequency	Absolute Frequency	Absolute Frequency	Percent Frequency	Absolute Frequency	Absolute Frequency	Percent Frequency	Percent Frequency
Males	44	77.2%	14	14	77.8%	17	17	81.0%	11	11	73.3%	
Females	1	1.8%	0	0	0.0%	0	0	0.0%	1	1	6.7%	
Males and females	12	21.0%	4	4	22.2%	4	4	19.0%	3	3	20.0%	
Unknown	86	-	30	30	-	40	40	-	15	15	-	
Totals	143	100.0%	48	48	100.0%	61	61	100.0%	30	30	100.0%	

indicated that they believed both sexes were responsible. These same relative frequencies were found when analyzing the NPS, USFS, and BLM individually.

It should be pointed out that a total of 103 out of 160 respondents marked this question "unknown" or left it blank. Sixty percent were hesitant to make a choice at all between males and females. In Petty's (1966) case-study portion of his paper he reported that 93 percent of actual vandalism incidents had involved men only.

Table 19 shows from what sized population centers respondents believed vandals were traveling. In answering the question relating to this, respondents were not limited to making only one selection among the choices listed; thus the total number of responses to this question exceeded 160. For all cases, the most frequent response was "town" (2,500-25,000 population), followed about equally by "village" (up to 2,500 population) and "city" (25,000-100,000 population). This same pattern held for the NPS and USFS, but the BLM respondents made a solid second choice of "village" after "town"; "city" was a distant third choice for BLM respondents.

The name labels--farm, village, town, city, and metropolitan area--are somewhat arbitrary appellations insofar as each (except farm) is associated here with a specified population range. However, some descriptive noun was desired so that it might act as a cue for respondents. Hopefully, the labels were not misleading.

The point of asking a question about population size is not to be able to claim that such-and-such a sized community produces the most vandals. One could make such a judgement, but it would not be well

Table 19. Population Sizes Indicated as Origins of Vandals.

Population Size	All Cases			NPS			USFS			BLM		
	Absolute Frequency	Percent Frequency		Absolute Frequency	Percent Frequency		Absolute Frequency	Percent Frequency		Absolute Frequency	Percent Frequency	
Farm	9	6.0%		2	6.1%		4	5.3%		3	7.7%	
Village (up to 2,500)	34	22.7%		6	18.2%		14	18.7%		13	33.3%	
Town (2,500-25,000)	56	37.3%		11	33.3%		26	34.7%		18	46.2%	
City (25,000-100,000)	31	20.7%		9	27.3%		18	24.0%		4	10.2%	
Metropolitan area (over 100,000)	20	13.3%		5	15.1%		13	17.3%		1	2.6%	
Unknown	52	-		26	-		16	-		9	-	
Totals	202	100.0%		59	100.0%		91	100.0%		48	100.0%	

grounded. Instead, responses to this question can tell us about how far the vandal is likely traveling to engage in the activity. Most of the communities nearby to the management areas under study are smaller ones; there simply are few large cities. We could conclude that the vandals are probably not traveling any large distances, because "town"--probably the most numerous of the population center sizes near these management areas--was the first choice of respondents. The data from this question support such a conclusion.

Petty (1966) found that his USFS respondents believed that towns of up to 2,500 population comprised most of the home towns of the vandals. For NPS respondents the first choice was population centers of 2,500 to 25,000 people.

As the results of Table 20 indicate, the large majority of all respondents believed most vandals were from, first, the local area, and second, between 35 and 100 miles away. When these two categories are combined, the resulting frequency for those making some choice except "unknown" is a full 83 percent. Some respondents made more than one choice among the distance choices provided. For example, some selected both "local area" and "out of state."

The one problem with how the choices were set up is that for those management areas close to, bordering, or straddling a state line, two or more choices may have all referred to the same locale from which the vandals came. "Out of state" as a term should not have been used, but instead only mileage distances. Despite any confusion caused by this arrangement, the high frequencies for "local area" and "35 to 100 miles" allows us to draw the conclusion that most vandals lived within

Table 20. Distances Traveled from Home by Vandals.

Distance	All Cases	
	Absolute Frequency	Percent Frequency
Local area	44	36.9%
35-100 miles	38	31.9%
Out of state	5	4.2%
Local area - 100 miles	17	14.3%
Local area and out of state	4	3.4%
35-100 miles and out of state	4	3.4%
Other	7	5.9%
Unknown	<u>27</u>	<u>-</u>
Totals	146	100.0%
Combining local area, 35-100 miles, local area - 100 miles	99	83.2%

a reasonably short distance of where they were engaged in depreciative activities.

A statement by an NPS Chief Park Ranger (not a respondent) would support the finding that local people were most frequently causing the damage. He wrote: "The only vandalism which has occurred to our knowledge, was the destruction of the wickiups which were simply pushed over. We assume this was done by local people since the sites were fairly isolated and would probably not have been located by anyone unfamiliar with the area" (Black Canyon of the Gunnison National Monument). Pilles (1976) wrote: "The pot hunting community has known the location of the big sites on the Forest for years. . . Local towns and cities probably do more pot hunting close to town." Pilles estimated the distances traveled by pot-hunters from a number of different northern Arizona towns to the affected sites, and in no case did they exceed 100 miles.

Petty's (1966) case study responses showed a nearly identical 76 percent of apprehended vandals were no more than 100 miles from their home communities. His explanation was that visitors who had come the greatest distances were more appreciative of the recreation areas and less willing to disturb them. This is probably a valid assertion to make for cultural resource vandalism, too, but certainly the factor of local people knowing the land and locations of cultural resources is very critical.

Table 21 furnishes the results of the question pertaining to motives of vandals, giving both absolute and percent frequencies. "Personal acquisition" was checked with the greatest frequency. This

Table 21. Vandalism Motives/Explanations.

Motive/explanation	All Cases	
	Absolute Frequency	Percent Frequency
Personal acquisition	116	28.6%
Profit motive	46	11.3%
Rebellion against agency, society, etc.	29	7.1%
Recreation	48	11.8%
Showing off	35	8.6%
Curiosity	52	12.8%
No underlying motivations - carelessness	17	4.2%
No underlying motivations - were unaware of the effect of their actions	60	14.8%
Other ¹	<u>3</u>	<u>0.7%</u>
Totals	406	99.9%

¹See text.

This term was intended to mean that the individual was gathering cultural objects for a personal collection. Among all responses, this particular one occurred with 29 percent frequency. When this response is tabulated together with "profit motive," a clearly related motive, the resulting frequency is 40 percent. The three responses at the end of the list provided in Question 18--curiosity, carelessness, and lack of awareness--are closely allied among themselves. A curious individual may be careless and unaware, too, or careful but unaware, and so forth. Taken together, these responses account for 32 percent, or nearly one-third, of all responses. "Recreation" is a strong response by itself, occurring with 12 percent frequency.

There were a few motives or reasons for vandalism written in by respondents for this question. These were "pot-hunting is a traditional activity in this area"; "historic graffiti begs modern graffiti"; and "absence of a preservation ethic."

Much was written earlier in the paper concerning the role of the art market in promoting the looting of cultural sites. The art market has made native Indian art fashionable, regardless of whether the pot-hunter (in the sense of digger) or the collector is inclined to sell what he finds. Weathered "barn" wood is now a popular commodity, so that stripping of old siding from a building is due to much the same motives, i.e., personal acquisition and profit motive.

Several steps have been taken to decrease the market for antiquities. In 1972 the U. S. Senate ratified the UNESCO "Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property." A number of United

States museums, as regular purchasers and donees of cultural objects, have adopted regulations governing the circumstances under which a potential new acquisition can be negotiated.

It is highly doubtful that very many big "prizes" are coming out of sites within the study region, yet the market is still operable. Want ads for "Indian relics," "Indian Baskets of Southwest," and "Southwest pottery," among other similar items, appear in magazines such as Hobbies - The Magazine for Collectors. Buyers are available, and from "Indian Relics for Sale" advertisements (such as in March, 1977, issue), it would appear their needs are being satisfied.

Commercialism also enters into the cultural resource vandalism picture by such means as a magazine article (Wehr, 1976) that played up the excitement of underwater artifact searching. The author enthusiastically mentioned the available conveniences of good facilities and dive guides; with the added attraction of local newspapers which eagerly printed stories and photos of discoveries.

One alleged reason given for pot-hunting in southeastern Utah is that collecting and saving artifacts by local people is the only means of assuring that cultural materials will remain in the vicinity of their origin, and out of the hands of archaeologists who may cart them hundreds or thousands of miles away to their home institutions for curation. This argument must carry some weight, as a public museum is now being built in the area spoken of for display and storage purposes. The feeling of possessory interest in the lands and their resources by neighboring individuals and communities is a matter of importance. Dr. McGimsey stated: "In the field of archaeology, two points are

paramount in the public concern: the completeness of the data recovered and the ultimate and continued public availability of the artifacts. . ." (1972, p. 6).

Cultural resource vandalism, these findings show, is indeed on the whole a distinct activity from vandalism in the usual, wantonly destructive sense. This latter vandalism, many researchers now believe, has purposes behind it. "Vandalism is not a senseless crime when the motivation is clear" (Madison, 1970, p. 51). These purposes may include: release of accumulated aggression; "saying something" to society; and escape from boredom. In Petty's (1966) study, "theft and collection" was located down the list of vandalism motives, accounting for 5 percent of the USFS response and 11 percent of the NPS response. Such other motives as "desire for attention," "rebellion and resentment," and "boredom and restlessness" were more frequently cited. While motives behind vandalism should continue to be investigated, reasons for cultural resource vandalism seem quite clear--resulting primarily from a desire to acquire artifacts, and from carelessness, ignorance, and curiosity. Also, poking around an old building or a Pueblo ruin is recreational in addition to possibly being acquisitional. "Rebellion against agency, society, etc." and "showing off" accounted for very few of the total motives and explanations imputed to cultural resource vandalism.

Table 22 shows that the large majority of respondents believed that individuals who are carrying on activities detrimental to cultural resources return to the same areas to do more of the same. For all respondents answering the question relating to this, a full 71 percent

Table 22. Responses to the Question: Do you believe that the individuals causing the vandalism tend to be "repeaters?"

Response	All Cases	
	Absolute Frequency	Percent Frequency
Yes	97	70.8%
No	40	29.2%
Totals	137	100.0%

checked "yes," they did believe the vandals in their management areas were "repeaters."

Vandals who return would, in all probability, be people from local areas who could most easily return to the cultural resource sites. The results in Tables 16 and 17, which have to do with home population sizes and distances traveled, would substantiate this impression.

Access to Vandalized Resources

Table 23 indicates that in the knowledge and beliefs of all respondents, the large majority of visitors are gaining access to cultural resources by means of two-wheel drive vehicle. Forty-two percent of the respondents so indicated, while 27 percent and 20 percent marked four-wheel drive vehicle and hiking, respectively. Only five percent noted the use of motorbikes for access.

This finding supports the observations of other writers. For example, Pilles (1976) wrote: "The most greatly defaced panels are generally closer to roads or are well known to the public."¹¹

Table 23 also shows that the frequency of access varied by agency. In the BLM areas, a nearly equal percentage of visitors arrived to the locations of cultural resources by four-wheel drive vehicle as by two-wheel drive vehicle. NPS respondents reported a relatively high percentage of hiking access--nearly comparable to two-wheel drive vehicle access for their areas.

¹¹Pilles has been engaged in a study of pot-hunting activity and how it relates to road accessibility in a 162 square mile area adjacent to Flagstaff, Arizona. I do not have the results to include in this paper.

Table 23. Means of Visitor Access to Vandalized Resources.

Means of Access	All Cases			NPS			USFS			BLM		
	Absolute Frequency	Percent Frequency	Absolute Frequency	Absolute Frequency	Percent Frequency	Absolute Frequency	Absolute Frequency	Percent Frequency	Absolute Frequency	Absolute Frequency	Percent Frequency	Percent Frequency
Two-wheel drive vehicle	89	42.0%	24	38.0%	40	46.0%	22	38.5%				
Four-wheel drive vehicle	57	27.0%	11	17.0%	24	28.0%	21	36.8%				
Motorbike	10	5.8%	1	2.0%	4	5.0%	5	8.8%				
Hiking	42	20.0%	20	32.0%	16	18.0%	6	10.5%				
Other:												
walking	5	2.0%	5	8.0%								
boating	4	2.0%	2	3.0%	1	1.0%	1	1.8%				
horseback	3	2.0%			2	2.0%	1	1.8%				
snowmobile	1	2.0%					1	1.8%				
no specific vehicle	1	-			1	-						
unknown	1	-					1	-				
Totals	213	100.0%	63	100.0%	88	100.0%	58	100.0%				

Respondents wrote in the following means of access for their management areas: walking (as opposed, probably, to distance hiking), boating, horseback, and snowmobile.

Frequency of Vandalism Occurrences

Respondents were asked to identify the trend in cultural resource vandalism occurrences in their areas over the previous five years. Figure 1 compares the trends among the three selected agencies (i.e., NPS, USFS, and BLM). Results show that the trend in vandalism occurrences is either remaining the same or is experiencing an upward movement for a majority of management areas. For all cases, 39 percent of the respondents indicated a gradual increasing trend, while 38 percent reported no change, or remaining about the same. Thirteen percent indicated a downward trend, and 10 percent noted a sharply increasing trend. Forty-seven percent of NPS respondents reported no change, while 31 percent believed the rate of vandalism occurrences was rising. Forty-seven percent of USFS respondents indicated an increasing trend, while 36 percent felt there had been little change in the rates of occurrence. The highest frequency, 15 percent, for reporting a sharply increasing rate of vandalism occurrences was found for BLM responses. Forty-two percent of that agency's respondents believed the trend was of a gradually increasing nature; 27 percent believed there had been little or no change.

Petty's (1966) findings follow a remarkably similar pattern. His results showed that 56 percent of USFS respondents believed the number of vandalism occurrences had been gradually increasing over the previous five years; 30 percent believed it had remained about the

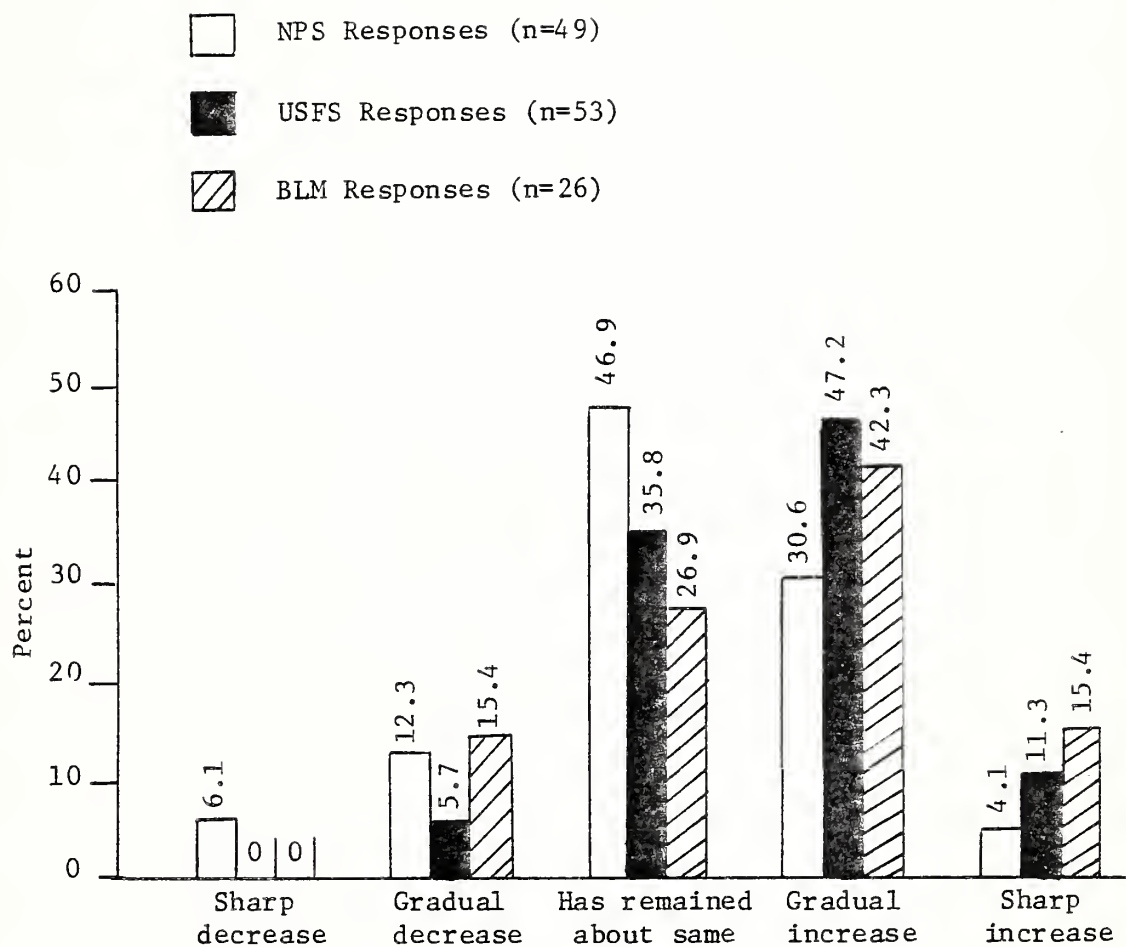


Figure 1. Frequencies in percent of five-year trends reported for vandalism occurrences.

same. Likewise, the pattern holds for his NPS responses. Fifty-two percent believed the rate of vandalism had remained about the same, while 38 percent saw a gradually increasing trend. There are some definite similarities, then, between trends for cultural resource vandalism occurrences and Petty's study of general Park and Forest vandalism.

Respondents were asked to identify the factors they believed were responsible for the vandalism occurrence trend they had just noted in the previous question. The discussion of the results of this portion of the questionnaire--pertaining to trend factors--will be handled in two steps. First, some comments will be made regarding the frequencies of factors checked by respondents (i.e., Question 23 response frequencies). Secondly, the results of the crosstabulation of occurrence trends (i.e., Question 22) with factors noted in Question 23 will be reported and discussed.

For each agency--NPS, USFS, and BLM--greater visitation to the management areas under study accounted for the greatest single response to the question asking for factors responsible for trend status (i.e., Question 23). This is slightly even more the case for the NPS. All agencies combined reported greater access by visitors to locations of cultural resources, greater knowledge by visitors of resource locations, and little law enforcement activity and prosecution. These three response categories all had about the same, large response frequency. When these three response categories were reviewed for each agency alone, there were some minor, but interesting differences. The USFS respondents in particular noted that in their areas visitors were

obtaining greater knowledge of resource locations. The BLM respondents emphasized little law enforcement activity and prosecution, and put it on a par with greater visitation as a factor in determining the trend in vandalism occurrences. A different "type" of visitor reported by 17 management areas may also be a factor bearing on the rate of vandalism occurrences. Ten of these responses identified this "type" of visitor as being more responsible or more aware of natural and cultural values. Two respondents felt the visitor was more urban, and less sensitive to natural and cultural values. One believed the visitor was rebellious against authority. One potential difficulty with the "different type of visitor" choice of response is that it is not clear if it is desired that the question wording referred to an altogether different, first-time visitor with attitudes unlike those of previous visitors, or the same visitor with changed attitudes and behaviors. Actually, the intent was to include both possibilities, and in fact there was probably little real difference between the effect of what two such different interpretations of "visitor" would have on the resource.

Crosstabulation permitted an analysis of which factor(s) the respondent believed was causing the upward trend in vandalism occurrences, the trend to remain the same, and the downward trend. Table 24a shows the factors and their frequencies which were considered reasons behind an upward trend in vandalism occurrences. This upward trend is a combination of the results for the gradually increasing and the sharply increasing trends. It was found that greater visitation to the management area as a whole accounted more than any other factor for

Table 24. Factors Affecting the Upward and Downward Trends in Vandalism Occurrences.

a. Upward Trend: gradual and sharp increases in vandalism occurrences			b. Downward Trend: gradual and sharp decreases in vandalism occurrences		
	Absolute Frequency	Percent Frequency		Absolute Frequency	Percent Frequency
Greater visitation to area as a whole	52	30.2%	Greater law enforcement activity and prosecution	4	21.0%
Greater access by visitor to locations of cultural resources	32	18.6%	Presence of fewer resources than previously	5	26.2%
Greater knowledge of locations of resources by visitor	37	21.5%	Different 'type' of visitor: more responsible, more aware	4	21.0%
Little law enforcement activity and prosecution	33	19.2%	Change in attitude of responsible resource managers: greater awareness of responsibilities	1	5.3%
Presence of fewer resources than previously ¹	4	2.3%	Other:		
Different 'type' of visitor: urban, less sensitive, rebellious	1	0.6%	Interpretation	1	5.3%
Other:	1	0.6%	Increased patrol	1	5.3%
Public's greater interest in collecting	8	4.6%	Improved visitor management	1	5.3%
Greater ORRV use ²	2	1.2%	Greater knowledge of resources by staff	1	5.3%
Transient workers in nearby area	1	0.6%	New jurisdiction by NPS	1	5.3%
Previous vandalism breeds more vandalism	1	0.6%			
Totals	172	100.0%	Totals	19	100.0%

¹The presence of fewer resources than previously may result in the ones remaining receiving more vandalism.

²Off-road recreational vehicle.

rising cultural resource vandalism occurrences. Also deemed as being very explanatory for the upward trend were: greater access by the visitor to locations of cultural resources; greater knowledge of locations of resources by the visitor; and little law enforcement activity and prosecution. Among the reasons written in by respondents, the most frequent was the public's greater interest in collecting.

Petty (1966) found, too, in his survey that increased visitation was the factor most responsible for an upward trend in park and forest vandalism occurrences. Greater accessibility by the visitor due to improved roads and means of transportation was fourth in Petty's response frequency, and inadequate laws and enforcement was also noted as responsible for this upward trend. Other important factors in his study did not appear in the results reported here, but the fact that three important explanations for increased vandalism appear in both studies is of some consequence.

An unfortunate, but not serious, omission from Question 23 was a place to indicate why the trend had remained about the same if this response was checked in Question 22. For example, a "status quo unchanged" choice might have been provided the respondent. Some respondents so noted in the "other" blank. However, many respondents answering "has remained about the same" in Question 22 proceeded to check off factors listed in Question 23. Probably in some instances the result was spurious data, but in others the respondent may have had acceptable rationale. For example, there were 14 checks for "greater visitation" explaining an unchanged trend. The self-policing effect of more visitors may have been coming into play here, because

of reduced seclusion for the vandal. Self-policing could have been holding down vandalism occurrences despite the development of other increase-prone factors; similarly for greater access to cultural resources. Greater access for the visitor because of better roads and trails also means improved access for the patrol officer.

Table 24b gives the frequencies of downward trend factors noted by respondents. Due to the noteworthy fact that very few respondents had earlier reported a downward trend in vandalism occurrences, the data to explain the trend are also limited. The main reasons for decreasing frequencies of vandalism occurrences were: presence of fewer resources than previously; greater law enforcement activity and prosecution; and different "types" of visitor.

Vandalism Control Techniques Used by Managers

One question (Question 7) was put before survey participants which simply asked for the techniques which had been used in their management areas to control vandalism. The question following (Question 8) asked for ratings of the effectiveness of the techniques just noted. A third question (Question 9) requested elaboration on techniques which had been used successfully. Two other questions (Questions 10 and 11) sought to determine the origin of the control techniques used.

Techniques Used

All techniques listed in the question had been tried. Table 25 gives the absolute and percent frequencies of response for each control technique. The greatest usage was of patrol--used by 51 percent of the areas--and signs, used by 49 percent. Interpretation or education,

Table 25. Vandalism Control Techniques Used by Resource Managers.

Control Technique	Absolute Frequency	Percent Frequency (N=160)
Posting of signs	78	48.8%
Ranger patrol as preventive measure	82	51.3%
Interpretation or education conducted for visitors	59	36.9%
Erection of physical barriers	51	32.0%
Punitive action for apprehended vandals	46	28.8%
Closing off of trails or roads	41	25.6%
Removal of resource itself by staff or other authorized personnel	29	18.1%
Working with local organizations	24	15.0%
No real control attempt has yet been made	57	35.6%
<u>Other:</u>		
No disclosure of site locational information	15	9.4%
Other techniques ¹	17	10.6%
Total	499	

¹See text for listing of other techniques. Due to the type of tabulation used, '17' is a minimum number for the frequencies of other techniques written in by respondents.

punitive action, physical barriers, and closing of trails or roads had also been used extensively as control techniques. Over one-third of the respondents reported that no real control attempt had yet been made in their areas.

Less frequently employed were: working with local organizations, and authorized removal of the resource itself. A technique, if it might be so termed, which was the most frequently written in by respondents was non-disclosure of site locational information. This was written in by nine percent of the respondents.

Other techniques identified by respondents included: stabilization of structures; use of media to promote awareness; prompt repair of damage; restitution by the apprehended individual in doing the repair work; education of field employees; restriction of visitors to trails; self-policing of visitors; and relocation of the resource to a more protected circumstance.

Some respondents indicated that as a control measure they had been working with local organizations. These they identified as being primarily archaeological and historical societies and organizations. Following is a listing of responses given:

	<u>frequency</u>
archaeological and historical societies and organizations	12
law enforcement officials	4
local people	1
jeep clubs	1
rock clubs	1
school district	1
Colorado Division of Wildlife	1
press	1

Two respondents described their activities in using the mass media to educate the public regarding cultural resource vandalism. Pilles (1976) was working with the Museum of Northern Arizona and Northern Arizona University on a television program dealing with pot-hunting. He also mentioned that two other such programs and several news spots had already been aired, and that newspapers had also been utilized. The Shoshone BLM District (Idaho) respondent reported plans to use newspapers, radio, and television to reach vandals and potential vandals.

Pilles (1976) also reported that his Forest was patrolling a large pueblo ruin by fire patrol airplane and monitoring electronic sensing devices installed in two pueblos.

Effectiveness of Techniques Used

In order to judge the effectiveness of control techniques used, a mean effectiveness rating was calculated for each technique. This was derived from the responses called for by the questionnaire. These responses were required to be in numerical form: 1 = very effective; 2 = moderately effective; 3 = not effective. For each technique, its "1," "2," and "3" responses were weighted and then averaged. Table 26 ranks the control techniques according to an ascending order of the mean effectiveness rating (the greater the number, the lower the overall effectiveness).

Rated the most effective technique was "authorized removal of the resource." This is understandable--with little or none of the resource present it would be difficult if not impossible to cause damage to it. "Closing off of trails or roads" was rated second most effective, closely followed by a related technique, "erection of physical

Table 26. Most Effective Vandalism Control Techniques for All Resource Types Noted as Most Subject to Vandalism.

Control Technique	Mean Effectiveness Rating ¹	n	Frequency of "Effectiveness Undetermined"
Removal of resource itself by staff or other authorized personnel	1.70	43	3
Closing off of trails or roads	1.90	64	1
Erection of physical barriers	1.92	69	5
Non-disclosure of site locational information	1.92	13	-
Interpretation or education conducted for visitors	2.01	104	7
Ranger patrol as preventive measure	2.12	134	5
Working with local organizations	2.12	44	6
Punitive action for apprehended vandals	2.36	80	8
Posting of signs	2.40	125	10

¹ Mean Effectiveness Rating obtained by weighting and averaging responses of: 1=very effective; 2=moderately effective; 3=not effective.

barriers." "Interpretation" was rated fourth. "Ranger patrol" and "working with local organizations" were both rated fifth most effective. "Punitive action" was rated sixth, and, despite its prevalent use, "posting of signs" was least effective of those techniques provided in the questionnaire listing. It appears that the technique written in by several respondents, "non-disclosure of site locational information," was considered to be moderately to very effective.

A number of respondents made the point that they could not evaluate the effectiveness of the techniques used because there was no way of knowing what the situation would have been like if there had been no techniques used. They were referring really to the absence of a "control group." This point should be remembered when examining the results of this study.

Table 27 shows how effective each technique was considered to be for each of the 12 selected resource types. It was found that respondents thought that patrol was best for stone or adobe-walled dwellings and mining structures. Posting of signs was rated moderately effective for building ruins. Physical barriers were seen as quite successful for open camp sites or chipping stations, rock shelters or caves, and building ruins. Closing off of trails or roads was perceived as having the greatest impact on stone or adobe-walled dwellings, rock art, and buildings of all construction modes. Interpretation was viewed as moderately effective for stone or adobe-walled dwellings, buildings of all construction modes, building ruins, and mining structures. Removal of the resource, of course, was perceived as highly effective for those resources capable of being removed. The non-disclosure of

Table 27. Mean Effectiveness Ratings of Control Techniques for Selected Resource Types. 1

Resource Type	Control Technique																	Total n
	Ranger patrol	Punitive action	Posting of signs	Physical barriers	Closing off of trails, roads	Interpretation or education for visitors	Working with local organizations	Authorized removal of resource	No disclosure of site locations	Structure stabilization	Media use	Prompt damage repair	Restitution by vandal for repair	Education of field employees	Visitors restricted to trails	Self-policing of visitors	Relocation of resource	
Open camp sites or chipping stations	2.36	2.13	2.55	1.67	1.86	2.10	2.20	1.17	1.80									69
Rock shelters or caves	2.22	2.00	2.47	1.33	1.40	2.25	2.25	1.25	2.00					2.00				65
Granaries or storage cists	2.5	3.00	2.00		1.00	2.00		3.00	2.00									8
Stone or adobe-walled dwellings	2.04	2.56	2.41	2.17	2.91	2.00	2.33	2.60			3.00	1.00			2.00			114
Rock art	2.41	2.56	2.50	2.00	1.60	2.40	2.14	1.25	1.67		3.00						1.00	88
Ranching structures	1.67	3.00	2.50	2.00	2.00	2.00		2.00		2.00			1.00					14
Historic buildings of unspecified construction mode	2.29	2.67	2.67	2.25	2.25	2.00	1.50	1.25	2.00					2.00				35
Historic buildings - log	2.20	2.67	1.67	3.00	1.50	1.67	2.00	1.00										22
Historic buildings - frame																		
Historic buildings - masonry	2.00		3.00	1.50	1.00	1.50	3.00									2.00		9
Historic buildings of all types	2.23	2.67	2.40	2.14	1.60	1.75	2.00	1.40										
Building ruins	2.13	2.50	2.00	2.00	2.25	1.88	2.00	2.00					1.00					30
Mining structures	2.17	3.00	2.33	2.00	2.33	2.14	2.50	2.00	3.00							2.00		44
Total n	97	51	88	45	49	75	29	36	13	2	2	1	2	2	1	2		
n of effectiveness undetermined	4	6	8	4	1	6	4	3		2								

1 Mean Effectiveness Rating obtained by weighting and averaging responses of: 1=very effective; 2=moderately effective; 3=not effective.

site locational information was perceived as particularly successful with open camp sites or chipping stations and rock art.

Evidently, there was little or no relationship between the frequency of use of a technique and the degree of success. This may be an indication of a lack of understanding of the problem and how to deal with it on the part of the managers.

Respondents were asked to elaborate on control techniques used in their management areas which had proven successful. Many of the comments regarding successes revolved around four techniques: patrol; interpretation; closing off of areas and erecting barriers; and keeping site locations secret. Patrol was frequently mentioned with interpretation as a good combination. However, its limited applicability (i.e., limited personnel for large geographical areas) was pointed out. A disadvantage of withholding site locational information--the reduction of possibilities for interpretation--was mentioned.

Appendix H contains a selection of the responses to this question which might prove helpful to the reader. Included also are the names of the management areas as well as the resource types to which the respondent was referring.

Origin of Techniques Used

It was desired to know if the survey agencies were, at the state, regional, or national level, issuing guidelines for the prevention of cultural resource vandalism. If so, were they applicable? If not, why did the individual management areas use their particular set of control techniques? Respondents were not asked to cite from which level the guidelines originated. Table 28 shows that, by a margin of

Table 28. Responses to the Question: Does your agency have guidelines for the prevention of cultural resource vandalism?

Response	All Cases			NPS			USFS			BLM		
	Absolute Frequency	Percent Frequency		Absolute Frequency	Percent Frequency		Absolute Frequency	Percent Frequency		Absolute Frequency	Percent Frequency	
Yes	103	70.1%		37	71.2%		47	77.0%		18	60.0%	
No	44	29.9%		15	28.8%		14	23.0%		12	40.0%	
Totals	147	100.0%		52	100.0%		61	100.0%		30	100.0%	

more than two to one, agencies had guidelines. This ratio is roughly the same for the NPS, USFS, and BLM separately. The USFS responded "yes" a little more frequently, and the BLM a little less frequently than average. Table 29 provides the response frequencies for the applicability of the guidelines. For all cases, "yes" was answered 74 percent of the time. The NPS response was 83 percent "yes," contrasted with 68 percent for each of the other two agencies (i.e., USFS and BLM).

As Table 30 shows, 31 percent of the 160 survey respondents indicated that the control techniques they used were the result of low funding levels for protection. The implication is that, had there been more money, different or at least more intensive control efforts would have been made. Looking at the responses of the three agencies, the NPS claimed that low funding levels was not a great reason, whereas for the USFS and BLM insufficient funds was checked by 39 percent and 36 percent of these respondents, respectively.

The techniques used were very seldom derived from managers being aware of successful applications in other management areas. Only nine of all respondents claimed this as a reason for the use of the control techniques. Perhaps there has been little communication among management areas on how to handle this kind of vandalism. Initiation by the area's management staff was more a reason for using the control techniques than borrowing from other areas. Sixteen percent of all cases made this response. By contrast, 26 percent of BLM respondents so indicated. Perhaps due to a greater lack of official guidelines, low funding levels, and varied environmental conditions, BLM managers were forced to take the initiative more of the time.

Table 29. Responses to the Question: Are guidelines for the prevention of cultural resource vandalism largely applicable to your situation?

Response	All Cases			NPS			USFS			BLM		
	Absolute Frequency	Percent Frequency	Absolute Frequency	Absolute Frequency	Percent Frequency	Absolute Frequency	Absolute Frequency	Percent Frequency	Absolute Frequency	Absolute Frequency	Percent Frequency	Percent Frequency
Yes	77	74.0%	33	82.5%	30	68.2%	13	68.4%				
No	27	26.0%	7	17.5%	14	31.8%	6	31.6%				
Totals	104	100.0%	40	100.0%	44	100.0%	19	100.0%				

Table 30. Reasons Cited by Resource Managers for Why They Instituted Vandalism Control Techniques Already Noted by Them.

Reason	All Cases		NPS		USFS		BLM	
	Absolute Frequency	Percent Frequency (N=160)	Absolute Frequency	Percent Frequency (N=61)	Absolute Frequency	Percent Frequency (N=64)	Absolute Frequency	Percent Frequency (N=31)
Low funding levels for protection (implication: money was limiting factor for what was done)	49	30.6%	11	18.0%	25	39.0%	11	35.5%
Other areas used one or more of these techniques effectively	9	5.6%	6	9.8%	1	1.6%	2	6.5%
Initiation by our management staff using only our own ideas	26	16.2%	12	19.7%	6	9.3%	8	25.8%
Totals	84		29		32		21	

Some respondents wrote in their own reasons for the use of the control techniques they indicated earlier. "Common sense" was a common explanation given.

The Phoenix BLM District (Arizona) respondent, writing about steps which that agency had taken to protect cultural resources, may have summarized for other respondents with this statement: "The work that has been done in this area so far has been generally poorly funded, spotty, and more or less stop-gap."

Other Techniques Having Potential to be Effective

Table 31 gives the frequencies of the responses to the question soliciting opinions on what other control measures (in addition to those already mentioned) might be effective within respondents' management areas. Some measures offered by respondents extended beyond on-the-ground control measures which are largely out of the hands of resource managers (for example, national media campaign and legislative changes). However, discussion in this section, as far as possible, will be limited to control techniques or measures which can be instituted on-the-ground.

For all resource types the most common response was interpretation or education. There were a number, too, of related responses, such as national media campaign and more personal contact with visitors. Increased ranger patrol and law enforcement was the second most common response. It, too, was accompanied by several related responses, such as aircraft patrols and intrusion alarm systems. Other important responses included punitive action, erection of barriers, posting of signs, and removal of the resource itself.

Table 31. Additional Control Measures Believed by Resource Managers to Have Potential to be Effective in Their Areas.

Response	Absolute Frequency
Interpretation or education conducted for visitors and local populace	33
National media campaign	4
More personal contact with visitors	3
On-site interpretation, including signing	1
Increased ranger patrol and law enforcement	25
Intrusion alarm system and/or cameras	4
24-hr. surveillance	2
Aircraft patrols	1
Better support from law enforcement officials and judiciary	1
Punitive action for apprehended vandals including simply prosecuting them	11
Restitutive work by apprehended individuals, including writing on value, need for protection of resource	2
Working with local organizations and residents	2
Erection of physical barriers	10
Posting of signs (not necessarily interpretive)	9
Closing areas to ORRV's	2
Closing entirely of some areas to the public, including structures	2
Better control of large groups	1
Inventory, evaluation of resources; with information to be used by staff	3
Selective preservation for interpretive purposes	2
Stabilization of important structures	1
Restoring defaced surfaces	1
Adaptive use of buildings	1
Better maintenance of resource	1
Removal of resource itself	6
Acquisition of all privately-owned structures and furnishings	1
Less publicity of resource's existence	4
Developing and carrying out land use plans	2
Make violation of Antiquities Act a felony, not misdemeanor	1
Additional funding, equating to additional staff	7
Total	143

It is interesting to find so much support for interpretation and education, considering their relatively low effectiveness as rated earlier. The same is true for ranger patrol. Since seven respondents to this question bluntly stated that additional funding was needed, and keeping in mind the finding that many management areas were experiencing low funding levels for protection, it is justifiable to conclude that these additional measures would be carried out if there were money to do so.

Harrison (1976) believed vandalism preventive techniques could be classed as: 1) design and maintenance of facilities; 2) attitude and behavior formation; and 3) law enforcement. Design measures do not particularly relate to cultural resources (except perhaps where structures are stabilized). Good maintenance, where applicable, does seem to be important (see Tables 11 and 12). She stated, however, that such measures are short-term and do not deal with the attitudes and behaviors causing vandalism. For this reason she felt education was the real answer. She said it must reach those who do not ordinarily participate in interpretive programs. Because changing a person's attitude does not necessarily change his behavior, Harrison stressed active involvement of the visitor in an educational program. Presumably, involvement would change behaviors as well as attitudes.

In a study of littering, Heberlein (1971) found there to be almost no relationship between anti-littering attitudes and actual littering behavior. But, real involvement of a person in some activity seems to cause that person to begin to have something personally at stake which would be lost by no involvement. This

forces changes in behavior as well as attitudes. For littering, offering incentives to those who may or may not otherwise litter has proven very effective in reducing littering. Studies by Kohlenberg and Phillips (1973); Powers, Osborne, and Anderson (1973); Clark, Burgess, and Hendee (1972); Clark, Hendee, and Burgess (1972); and Burgess et al. (1971) have shown the positive effect of incentives, of getting the public involved. The same principle of reinforcement upon involvement can be applied successfully to vandalism. Sommer (1972) emphasized the need for user design and maintenance of parks and other facilities people use as the best way to reduce a sense of alienation from, and a desire to be violent toward, the man-made environment. The Department of Recreation and Parks, City of Los Angeles (1971), recommended the development of pride among youth in their facilities to prevent vandalism. Pride would come from having a stake of some kind in the facilities. Wilson (1961) found, in his study of effective practices used to reduce vandalism in park, recreation, and combined departments in American cities, that public involvement and other educational programs were rated as quite effective.

Public involvement in specifically cultural resource-oriented programs would seem to have much potential for success. The "Desert Watch" is a group of people determined to protect petroglyphs from vandals and black marketeers in southern California (Bureau of Land Management, undated). The involved people are concerned local residents. Johnson (1975) developed a means of having recreational vehicle campers take part in identifying and reporting on prehistoric camp and rock art sites. These sites were located adjacent to a

private campground in which the campers were staying. Johnson called this "protective interpretation," as he and others hoped it would reduce the susceptibility of these sites to vandalism.¹² One respondent suggested the formation of an organization for amateurs interested in archaeology which would be based upon the Audubon Society principle of enjoyment without destruction.

The other key to controlling vandalism, in addition to education, seems to be law enforcement. The results of this study suggest this, as do many writers on the subject. Cook (1964) made a point which is pertinent to this discussion of cultural resource vandalism. He said: "To enforce rules and regulations requires at least two things: First, they must be legal; second, there must be personnel to enforce them" (p. 242). As was pointed out earlier in this paper, the vastness and rugged nature of the land in the Rocky Mountain West make it highly impractical to conduct an aggressive law enforcement campaign. The result is that many of the laws and regulations become unenforceable and do little good. There is even a suggestion that the Antiquities Act may be unconstitutionally vague. Nonetheless, as Harrison (1976) stated, law enforcement will always be necessary in certain situations. Therefore, the limited law enforcement resources and capabilities which may exist must be wisely utilized. Along this line, Cone (1972) suggested a goal-oriented approach to law enforcement in parks and recreation areas. Harrison (1976), too, suggested such a positive

¹² Johnson (1977) wrote, as a follow-up to the article, that the recreational vehicle park had changed hands, causing heretofore good cooperation in the program to lessen. He could not therefore evaluate the effectiveness of involving the public in this manner.

approach, particularly with regard to signing. Signs, she stated, should be interpretive and friendly, not excessively authoritative or offering few explanations for the order given.

Related to this discussion of law enforcement is the occasional regulative effect visitors have on each other. The Fort Laramie National Historic Site (Wyoming) respondent wrote: "The few thefts we have had all occurred during late fall when there are few (or none) other visitors on the area and a reduced staff" (1976). Other respondents also reported that visitors to their areas had helped to keep each other in check, thus reducing the incidence of vandalism (see Table 32). However, resource managers should not rely heavily on the self-policing of visitors, according to Clark, Hendee, and Campbell (1971). In their study of depreciative behavior in forest campgrounds, they found that greater than 80 percent of all observed depreciative acts were committed when other people were around. Furthermore, those campers present at the occurrence of depreciative behavior by others tended to ignore or not see the activity. For vandalism as one form of depreciative behavior, 53 percent of these acts took place when no one else was around, and 44 percent occurred when others were in the vicinity but no reaction was elicited from them.

As Tables 25 and 26 indicate, the non-disclosure to visitors of cultural resource site locational information was a frequent vandalism control technique used and was also considered to be effective. While perhaps being undesirable from the standpoint of reducing possibilities for interpretation, this control measure is legal¹³ to institute when

¹³Public Law 94-458 made it no longer illegal for the Secretary of Interior to withhold site locations from visitors.

Table 32. Speculation on Why Vandalism is a Minor or No Problem for Managers of Certain Areas Despite Presence of Cultural Resources.

Reason	Absolute Frequency
Isolation of resource	17
Little public knowledge of resource existence or location	12
Low visitation to area in general	11
Patrol/surveillance; high visibility of area personnel	7
Few and/or low concentrations of resources	22
Restricted access by regulation and/or physical barriers	5
Resource wholly or partly removed by staff or vandals	4
Visitors and/or locals direct attention elsewhere in area, believing no significant resources present	4
Staff not concerned with resource	4
More responsible visitors	4
Resource is difficult to detect or does not attract vandalism	3
Local people have interest in preserving resources	3
Resource area and general area well-maintained; damage quickly repaired	3
Year-round staffing	2
Management staff uninformed about resources, therefore do not realize the degree of the problem	2
Historic buildings are occupied	2
No marking of sites	2
Difficulty in reaching area results in more appreciative visitors	2
Staff more concerned with industrial construction damage than vandalism by individuals	2
Establishment as NPS area	2
Fear of federal law enforcement	1
Day use only (closed off at night)	1
Interpretation	1
24-hour surveillance	1
Selective recognition of resources of management staff for planning purposes	1
Regulative influence of other visitors	1
Natural weathering has caused original structure to be difficult to identify	1
Acquisition by Bureau of Reclamation precluded public visitation	1
Total	121

the subject resource is a property listed in the National Register of Historic Places.

Agency Differences

The wise employment of techniques to control vandalism is essential. Equally as important is the bearing that the overall direction, specific objectives, financial and personnel resources, and "mood" of an agency have on the cultural resources under its jurisdiction. Questions 24 through 27 attempted to get at what some of the differences might be among the three selected agencies and how these differences might be affecting the cultural resource protection program of each. Managerial solutions to problems of cultural resource vandalism encompass more than the application of on-the-ground control techniques; they include the orientation of the whole agency as well. Thus, these questions were included in the study.

Agency Management Objectives

Figure 2 shows that there were differences among the three agencies in how certain management objectives were rated. Each objective was classified as coming under either "cultural resources," "general management," or "vandalism."

Under the "cultural resources" heading (Figure 2a) the greatest emphasis for all cases was placed upon inventory/evaluation of all cultural resources, and secondly upon preservation of selected resources. The least emphasized objective (perhaps no objective at all) was informing visitors, upon request, of types and locations of cultural resources. The same ordering of objectives for this section

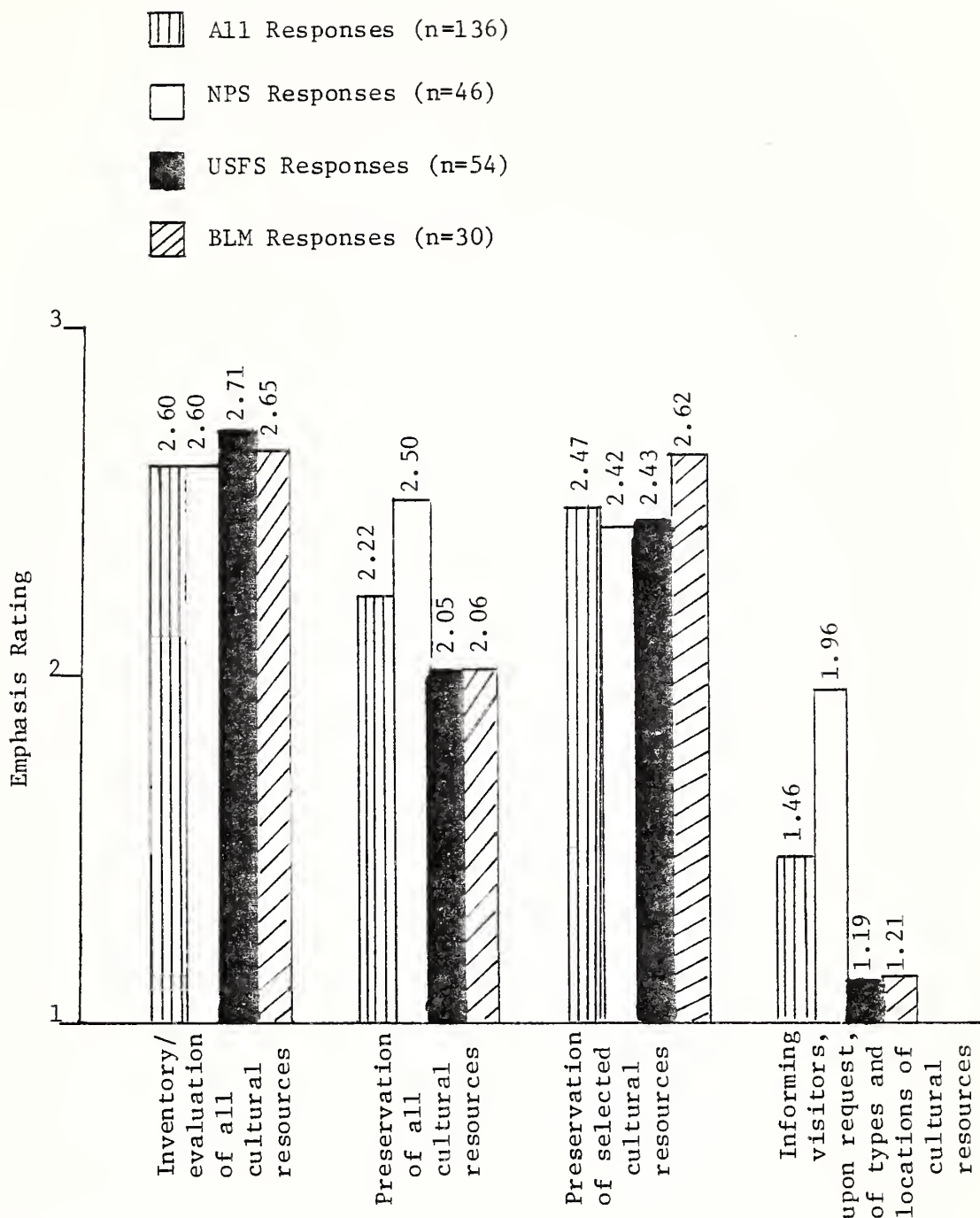


Figure 2a. Emphasis ratings¹ of management objectives for all respondents and for each agency: cultural resources.

¹Rating obtained by weighting and averaging responses of: 3 = great emphasis; 2 = average emphasis; 1 = little or no emphasis. (Note: responses have been reverse-coded for the purposes of illustration in this figure.)

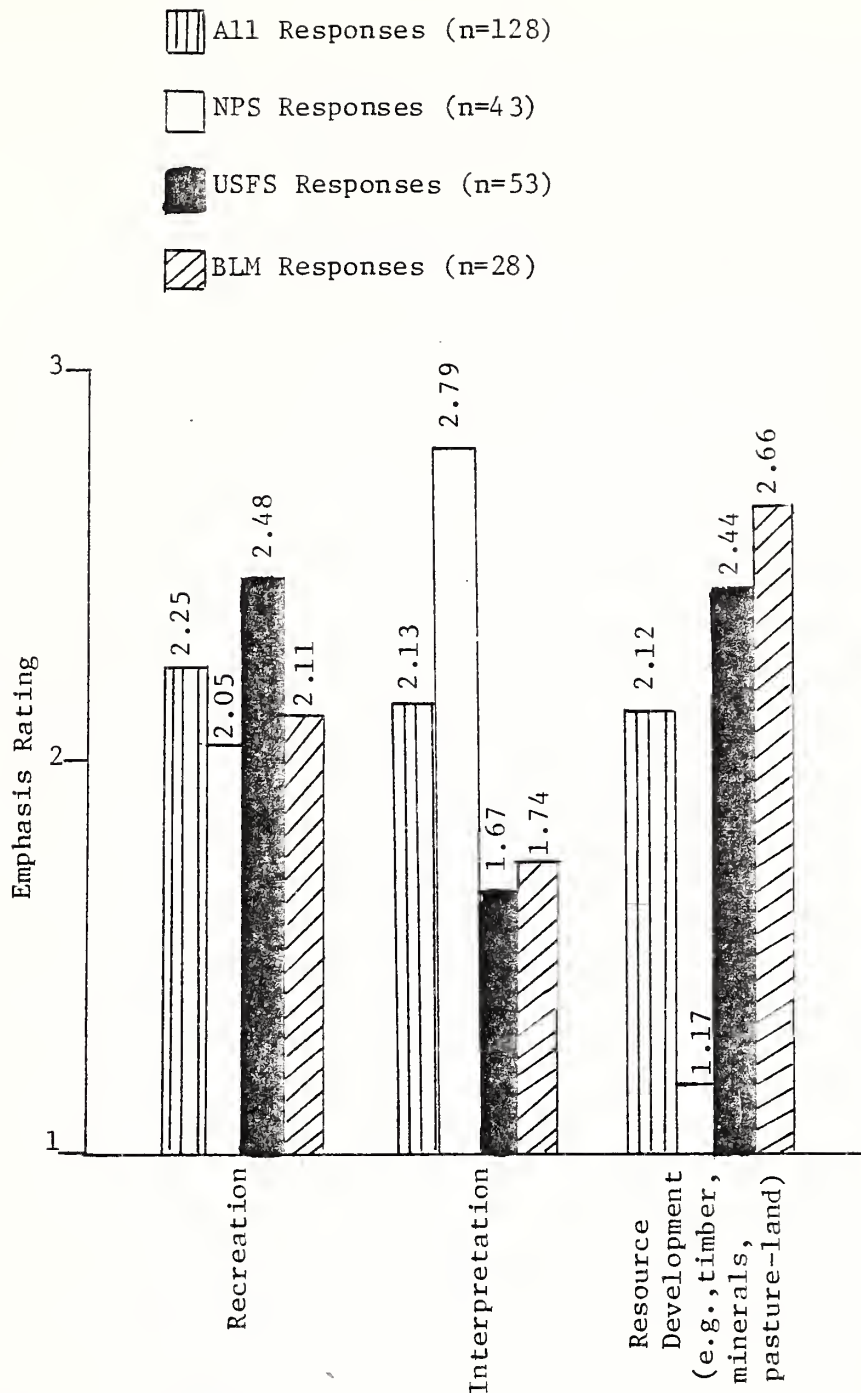


Figure 2b. Emphasis rating¹ of management objectives for all respondents and for each agency: general management.

¹Rating obtained by weighting and averaging responses of: 3 = great emphasis; 2 = average emphasis; 1 = little or no emphasis. (Note: responses have been reverse-coded for the purposes of illustration in this figure.)

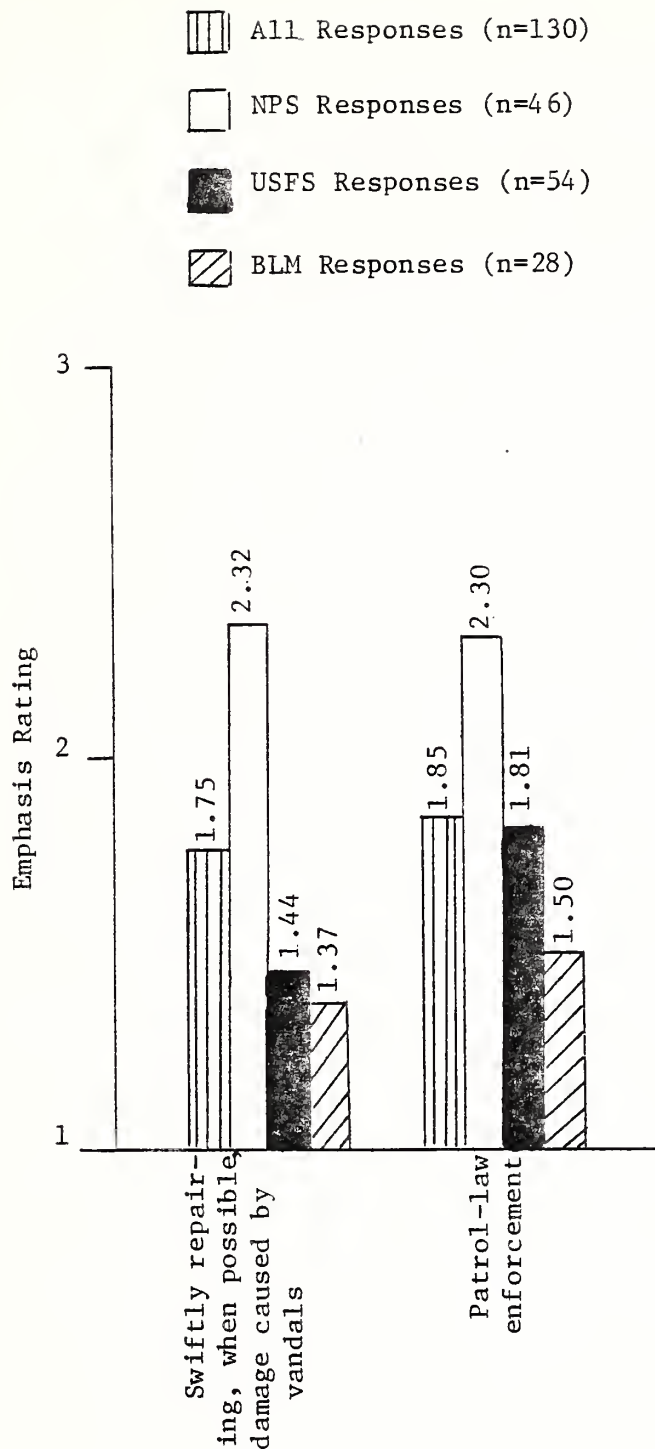


Figure 2c. Emphasis rating¹ of management objectives for all respondents and for each agency: vandalism.

¹Rating obtained by weighting and averaging responses of: 3 = great emphasis; 2 = average emphasis; 1 = little or no emphasis. (Note: responses have been reverse-coded for the purposes of illustration in this figure.)

was true for each of the three agencies as well, except that the NPS placed preservation of all cultural resources second only to inventory/evaluation.

Under the "general management" heading (Figure 2b) there were substantial differences among the agencies. For the population as a whole, the ranking according to degree of emphasis was: 1) recreation, and 2) interpretation and resource development (same emphasis). For the NPS the solid first-choice was interpretation, followed by recreation, with resource development not emphasized whatsoever.

The USFS response indicated a very nearly equal emphasis on recreation and resource development, with interpretation as the least stressed objective. From the data, the BLM's apparent priority was resource development, followed by recreation, with interpretation a low third priority after the other two.

Under the "vandalism" heading (Figure 2c) there was low general emphasis upon both swiftly repairing damage and patrol-law enforcement, with patrol-law enforcement a little more stressed. Low but equal emphasis upon these two objectives was also true for each of the agencies, a slight exception being the USFS's greater emphasis on patrol-law enforcement than damage repair. There was a trend among the agencies in which the NPS placed the greatest stress upon both of these objectives; the USFS placed a lower degree of emphasis; and the BLM placed the least emphasis.

Effect of Vandalism on Overall Area Management

When asked how serious cultural resource vandalism was to the overall successful management of their areas, 61 percent of all

respondents claimed their areas faced a minor problem with cultural resource vandalism. Figure 3 also shows that 28 percent claimed a major problem, and 11 percent stated they had no problem.

While the NPS and USFS tallies show about equal percent frequencies for "minor problem," 12 percent of the NPS areas and 29 percent of the USFS areas claimed a "major problem." The BLM showed completely different response frequencies. For that agency, a majority--57 percent--stated that cultural resource vandalism presented a serious management problem, 43 percent said they have a minor problem with it, and in no instance did a BLM respondent report no problem.

One clarification is necessary for this question. Note that the question (Question 25) is worded not to solicit the degree of seriousness of vandalism as a solely cultural resource management problem, but as one of perhaps several management problems within an area. More dramatic figures for Question 25 probably would have been obtained if it had been worded to mean "seriousness as a cultural resource management problem." At least six respondents added a note to say that their choice of a response would have been different had the question read that way. However, the intention was to find out how much of a stumbling block cultural resource vandalism was to the successful management of the whole area.

Seriousness as a management problem was crosstabulated with resource types most subject to vandalism. Eighty-seven percent of all respondents who claimed cultural resource vandalism was a major management problem in their areas had earlier in the questionnaire identified at least one and sometimes two of the same 12 selected

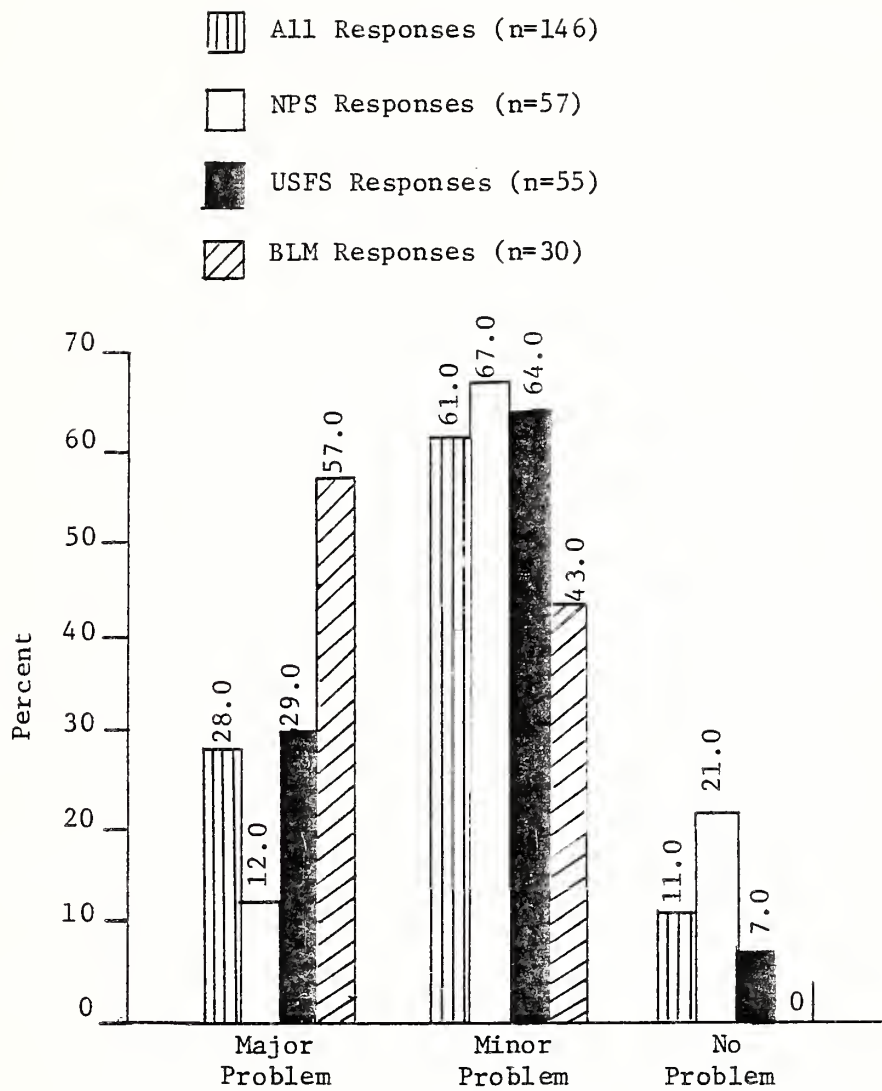


Figure 3. Seriousness of cultural resource vandalism to overall successful area management.

resource types as being most subject to vandalism in their areas. This shows that there is probably a strong relationship between how serious vandalism is as a management problem and the particular resource types involved. This result also further justifies the decision to examine these 12 resource types in-depth in terms of their associated vandalism problems.

Seriousness as a management problem was also crosstabulated with groupings of management areas. For example, National Parks, National Memorials, National Parkways, and National Memorial Parks were lumped together to determine what the combined response frequencies would be for the question on seriousness. It was found that BLM Districts most often reported a major problem, followed by National Forests. The highest percentage of respondents reporting a minor problem with cultural resource vandalism were representing, in the NPS system, Parks, Memorials, one Parkway, and one Memorial Park. The highest percentage of respondents stating they had no problem were managers of National Historic Sites, one National Battlefield, and one National Historic Park. These results would seem to indicate that a clearly designated historic area is less susceptible to cultural resource vandalism. Perhaps this is due to greater visitor appreciation and respect combined with greater visitor regulation.

Respondents who reported cultural resource vandalism as a minor or no problem for management in their areas were asked to speculate on why that was the case. It was assumed that cultural resources were present. Table 32 shows that respondents quite often gave the reason that their resources were isolated or difficult to get to. Twenty-two

areas speculated that few and/or low concentrations of resources were responsible for a record of little or no vandalistic acts. Other frequently mentioned reasons were: little public knowledge of resource existence or location; low visitation to the area in general; and patrol/surveillance or high general visibility of management area personnel. Only one respondent cited the reason for little or no vandalism as being due to an effective interpretive program. These results provide an indirect means of evaluating vandalism control techniques, whether they were active or passive. For example, keeping a cultural resource isolated by not developing roads or by not informing visitors of how to reach it is a passive technique, yet an effective one. Maintaining high staff visibility would appear to be an effective, active technique.

Employees Trained to Recognize Cultural Sites

Table 33 shows that 77 percent of all respondents said there was at least one field employee in each of the areas who was adequately trained to recognize cultural sites. For the agencies considered separately, the BLM showed the greatest percentage of trained field employees--97 percent. Seventy-six percent of the USFS areas reported a trained field employee, and 70 percent of the NPS areas said they had an employee able to recognize cultural sites.

Care must be taken to report these responses within their proper contexts. The BLM now has an archaeologist working on each District, which is generally a large geographical area. The BLM respondents were usually these same archaeologists, and their statements that there was at least one trained field employee were probably made in

Table 33. Responses to the Question: Is at least one field employee in your area adequately trained to recognize cultural sites?

Response	All Cases			NPS			USFS			BLM		
	Absolute Frequency	Percent Frequency	Absolute Frequency	Absolute Frequency	Percent Frequency	Absolute Frequency	Absolute Frequency	Percent Frequency	Absolute Frequency	Absolute Frequency	Percent Frequency	Percent Frequency
Yes	113	77%	38	70%	44	76%	29	97%				
No	33	23%	16	30%	14	24%	1	3%				
Totals	146	100%	54	100%	58	100%	30	100%				

reference to themselves. If these respondents considered their districts as the "field," then the term for BLM respondents meant something different than it may have meant for NPS respondents. Park Service areas are usually considerably smaller than BLM Districts, and there generally are not NPS archaeologists working at the basic area management level. The USFS has regional archaeologists and some "zone" archaeologists over smaller geographical areas, but, again, what USFS respondents considered to be "field employee" is not altogether clear. These questions aside, one interpretation of the results as reported is that the BLM is the best equipped of the agencies to assess the actual extent of cultural resource vandalism taking place within its own bounds. Had this been as true for the NPS and USFS, there is the possibility that the frequencies of "major problem" (see Figure 3) responses for the NPS and USFS would have been higher.

The USFS in its Region 2 has recently initiated a program to train regular Forest Ranger District personnel to recognize cultural sites in the field. These "Paraprofessional Cultural Resource Specialists" will surely begin to have a beneficial effect on the entire USFS cultural resource management program in Region 2. They will be able to identify sites so that protective measures and recording can take place. While it is too early to assess results, this program appears to be a good idea.

Antiquities Act

Table 34 shows that 81 percent of the respondents believed the federal Antiquities Act of 1906 is not an effective deterrent to

Table 34. Effectiveness of the Antiquities Act as a Vandalism Deterrent.

Response	All Cases			NPS			USFS			BLM		
	Absolute Frequency	Percent Frequency		Absolute Frequency	Percent Frequency		Absolute Frequency	Percent Frequency		Absolute Frequency	Percent Frequency	
Not effective	120	81.1%		37	68.5%		49	83.1%		30	96.8%	
Effective	<u>28</u>	<u>18.9%</u>		<u>17</u>	<u>31.5%</u>		<u>10</u>	<u>16.9%</u>		<u>1</u>	<u>3.2%</u>	
Totals	148	100.0%		54	100.0%		59	100.0%		31	100.0%	

cultural resource vandalism.¹⁴ Ninety-seven percent of the BLM respondents did not believe the law was effective; 83 percent of the USFS respondents believed it was not; and 69 percent of the NPS respondents did not think so either. Clearly, there appears to be serious difficulties in using this 71-year old piece of legislation as a weapon against vandalism.

It is interesting to note that degree of seriousness of vandalism as a management problem for each agency (see Figure 3) seems to be directly related to how ineffective the Antiquities Act is deemed to be by that agency.

Respondents were asked to state reasons why the Antiquities Act was ineffective. Table 35 indicates that a large number of respondents believed that few people were aware of the Act or understood its intent and that there were enforcement difficulties. Enforcement problems, according to respondents, can be broken down into the following elements: 1) difficulty of being in the right place at the right time; 2) lack of funding or manpower; 3) enforcement authorities are discouraged by problems inherent in the law itself; and 4) the Antiquities Act receives low enforcement priority by resource managers.

Many respondents viewed the judicial process itself as greatly hampering the effective operation of the law. Several stated that the judicial process simply did not follow through, both in the prosecution and sentencing stages. Other court-related hindrances cited were: 1) the law is vaguely worded, causing courts to be reluctant to

¹⁴ See Appendix G for complete text of Antiquities Act.

Table 35. Reasons Cited for Why Antiquities Act is Not an Effective Vandalism Deterrent.

Reason	Absolute Frequency	Percent Frequency
1. Few people are aware of the Act or understand its intent	47	28.3%
2. Not enforced/difficult to enforce	51	30.7%
3. Lack of prosecutable cases	4	2.4%
4. BLM has not had legal enforcement authority	1	0.6%
5. Local or federal authorities will not enforce Act	3	1.8%
6. Federal enforcement authorities themselves have superior artifact collections	1	0.6%
7. Lack of consistent approach to enforcing Act by agencies working in a common geographical area	1	0.6%
All enforcement problems (Reasons 2-7)	61	36.7%
8. Judicial process does not follow through, both in prosecution and in sentencing	13	7.9%
9. Courts consider violations to be victimless crimes	1	0.6%
10. Courts consider wording to be too vague	12	7.2%
11. Courts consider violations to be not worth prosecuting, i.e., too insignificant	1	0.6%
12. Courts reluctant to prosecute due to recent Court decisions (i.e., Diaz case)	6	3.6%
All court-related problems (Reasons 8-12)	33	19.9%
13. Vandals ignore Act because of low risks involved	8	4.8%
14. Insufficient penalties relative to selling prices of artifacts	13	7.9%
15. Institutions desiring to do archaeological work bypass permit application because process is too time-consuming	1	0.6%
16. Natural inclination of people to collect	2	1.2%
17. Precedence of continued vandalism since passage of Act	1	0.6%
Totals	166	100.0%

prosecute; 2) the precedence of the Diaz¹⁵ case, in which the Antiquities Act was declared unconstitutionally vague; 3) violations of the Act are considered too insignificant to prosecute; and 4) violations are victimless crimes, and receive low priority to prosecute.

The other major insufficiency causing the law to be ineffectual, in the view of respondents, is that penalties imposed by the law are too low relative to current sale prices of artifacts being dug up. As one respondent wrote: ". . . what is the benefit of a \$500 fine when certain pots bring several thousand dollars on the open market" (Socorro BLM District, New Mexico).

Table 35 also gives other reasons written in by respondents for why the Antiquities Act has not been effective. These reasons included: 1) there has been a lack of prosecutable cases; 2) vandals ignore the Act, because potential gains outweigh risks; 3) local or federal authorities will not enforce it; 4) federal enforcement authorities themselves have superior artifact collections; 5) lack of consistent approach to enforcing the act by agencies working in a common geographical area; 6) the BLM has not had legal enforcement authority; 7) natural inclination of people to collect; 8) the precedence of vandalism going largely unchecked since the passage of the Act; and 9) institutions desiring to make archaeological investigations bypass the permit requirement because the application process is too time-consuming.

¹⁵"United States v. Diaz," 499 F. 2d 113 (9th Cir. June 24, 1974).

All reasons having to do with a lack of successful enforcement of the Antiquities Act accounted for 36 percent of all reasons why the Act was not effective. Court-related problems accounted for 19 percent of all respondent reasons. This is compared with 28 percent of the reasons being related to poor public awareness of the Act.

One example of public ignorance of the law comes from Montezuma Castle National Monument. A visitor in 1960 had come upon two infant burials while "poking around" Montezuma Well. He removed them and showed them to the Monument staff. The record of this incident states: ". . . (the visitor) seemed wholly ignorant of the fact that he was violating a law when he removed these burials" (Montezuma Castle National Monument, 1963).

People who surface collect seem simply to be totally unaware that it is a harmful and illegal activity; "arrowhead collecting" has always sounded innocuous.¹⁶

Grayson (1976) evaluated the reasons why two attempts in 1975 to prosecute Antiquities Act violations in Oregon failed. He was able to make two statements: 1) that the U. S. Attorney in the District of Oregon believed that violations of the act are too minor to prosecute; and 2) that the "Diaz" decision had a large negative impact upon the Ninth Circuit Court of Appeals, causing the Court to be reluctant to prosecute. Grayson concluded that clarifying regulations for the Antiquities Act must be enacted immediately if the Act was to have any

¹⁶The Office of the General Counsel of the U. S. Forest Service expressed the opinion (in FSM 2360, Emergency Directive No. 6, January 11, 1972) that the casual collection of Indian artifacts from National Forest lands was precluded by the Antiquities Act.

merit within the Ninth Circuit Court. Responses to the present inquiry (see Table 35) show that word of unsuccessful prosecution of Antiquities Act violations reached many of the management areas under study.

However, prosecution under the Act was successful in the District Court of New Mexico, which in 1976 found two men guilty of unlawful excavation of an archaeological site on the Gila National Forest (Green, 1977).

To circumvent the problems of judicial officials being unwilling to prosecute and the ineffective threat of minor penalties even if prosecution were to take place, some agencies have taken steps of their own. The U. S. Forest Service recently established its own regulations prohibiting cultural resource vandalism. A local Justice of the Peace is able to prosecute violations of these regulations; federal attorneys and courts are not involved. In addition, the USFS instituted a reward system "for information leading to the conviction of any person charged with destroying or stealing any property of the United States" (36 CFR, Chapter II, National Forest System Prohibitions). The Hopi and Navajo Tribes have each drawn up their own guidelines for protecting their cultural resources.

Green (1977) believed that penalties under Antiquities Act convictions for illegal excavation should be commensurate with the cost of having done the excavation, recording and reporting properly, plus the added value on the market of artifacts recovered from the vandals. The latter value would provide a means of penalizing according to the immensity of the attempted crime.

Long-range Solutions to Cultural Resource Vandalism

Table 36 provides the frequencies of responses relating to beliefs about effective long-run solutions to cultural resource vandalism. A question soliciting such responses was placed before respondents in the hope that they would state their beliefs free of any confinement of having to think of on-the-ground control techniques only. Discussion in this section, (unlike the discussion for the results shown in Table 31, which focused on immediate, on-the-ground control techniques), will concentrate on broader solutions to vandalism. These solutions would require the efforts of individuals who are generally not positioned in the field, but rather at state, regional, and national levels.

Responses, as given in Table 36, centered around education and law enforcement, as they did for the responses shown earlier in Table 31. Individual responses, of course, were phrased differently from each other as the question posed was open-ended. The means given for this educational process varied from on-site interpretation to building understanding in the home communities of present and future visitors.

Responses pointing toward the regulation of visitor behavior included: obtaining greater staff visibility; strict law enforcement by personnel; visitor self-regulation; round-the-clock surveillance; physical barriers; and intrusion alarm systems. These proposed solutions accounted for 33 percent of all responses.

Other frequently-cited, possible solutions included: 1) inventory and evaluation of cultural resources (presumably as the basis for management); 2) non-disclosure of site locations except where

Table 36. Beliefs Concerning Long-Range Solutions to Cultural Resource Vandalism.

Solution	Absolute Frequency	Percent Frequency
1. Education, information for visitors on-site or in home communities	80	33.2%
2. On-site interpretation and personal contact	16	6.6%
3. Education of field employees	3	1.2%
All solutions having to do with education (Solutions 1-3)	99	41.1%
4. Additional staff for visibility	3	1.2%
5. Greater patrol/surveillance	26	10.8%
6. Protection	8	3.3%
7. Physical barriers	4	1.6%
8. Restrict visitor movement and resource usage	4	1.6%
9. Surveillance by visitors themselves	1	0.3%
10. 24-hour surveillance	1	0.3%
11. Law enforcement, including apprehension, prosecution, and sentencing	31	12.9%
12. Intrusion alarm systems	1	0.3%
All solutions having to do with law enforcement and other forms of visitor regulation (Solutions 4-12)	79	32.8%
Inventory/evaluation of resources	14	5.8%
More effective legislation	2	0.8%
Cooperation among agencies responsible for resource protection	1	0.3%
Stabilization of selected structures	4	1.6%
Non-disclosure of site locations except where protection is possible	6	2.4%
Keep management area isolated by no further road development or other improvements	1	0.3%
Resource removal by salvage	6	2.4%
Better planning and management	6	2.4%
Selective preservation and protection	3	1.2%
Good maintenance of resource	3	1.2%
Local display and availability of certain artifacts	2	0.8%
Establishing local interest groups	1	0.3%
Permit interested amateurs to participate in professionally-supervised digs	1	0.3%
Government acquisition of private inholdings	2	0.8%
Improvement in living conditions of local people	1	0.3%
Bury or otherwise hide resource	2	0.8%
Publicize fact that significant resources have already been removed	1	0.3%
Archaeological profession must come to grips with the problem	1	0.3%
No complete solution	1	0.3%
Unknown	5	2.0%
Totals	241	100.0%

protection is possible; 3) partial or complete removal of the resource by acceptable means; and 4) better planning and management.

Several respondents to the questionnaire believed the only real answer to cultural resource vandalism is a wide-scale, education campaign utilizing various media. Two respondents mentioned being personally engaged in this type of approach. One of them, Pilles (1976) wrote:

Education is necessary at grammar and high school levels to get school children to accept the value of cultural resources and the evils of pot hunting. Besides stopping their pot hunting potential before it starts, hopefully pressure by kids on their pot hunting parents would have some effect.

Petty (1966) learned that 41 percent of his U. S. Forest Service respondents and 48 percent of his Park Service respondents considered education via the mass media, lectures, and publications to be an effective vandalism preventive.

One respondent stated that the archaeological profession must come to grips with the problem and be the leader of any broad educational movement. Many writers would be in agreement with this statement. Recognized as the spokesman for conservation archaeology, Charles McGimsey emphasized his theme: "It is the active practitioners of archaeology, both full-time and part-time, who hold the key to future success or failure of the endeavor to educate the remainder of the public and to preserve our archaeological heritage" (1972, p. 7). The National Trust for Historic Preservation (1966) issued a final guideline urging preservationists to utilize all communication media to mobilize public opinion behind preservation projects and to deepen appreciation of the cultural heritage. Other professionals, including

Clewlow (1971) and Sheets (1973), firmly underscored the need for their peers to take the leadership role in educating the public.

As Table 36 indicates, two responses called for more effective legislation. That this is needed is supported, too, by the data of Table 35, on Antiquities Act points of failure. While it seems clear that the Antiquities Act requires strengthening to be more of a deterrent to vandalism, there are also other legislative routes which could be followed. For example, as mentioned earlier, the USFS has written its own regulations. McGimsey (1972) urged a strong package of state laws. The exemplary results of a state-backed program combining legislation and education in Arkansas under McGimsey's leadership is his best recommendation. McGimsey felt education is the true answer, but that well-written laws have a place, particularly in that they are public statements of a state's desire to preserve and protect archaeological resources. Any law written, he said, should be part of a total state program and should avoid the negative approach. Marin County, California, has shown that even a county ordinance can be passed with the purpose of conserving cultural resources (King, 1968).

Even with adequate legislation providing the basis for law enforcement, a lack of willingness and ability of judicial officials and courts to effectively prosecute cancels out the positive elements of a law enforcement program. As Wagar (1964) wrote: "Experience has shown that a reputation for probable arrest and conviction of offenders will soon reduce the need for such action to a minimum." Cooperation between the judiciary and the resource manager is very important. Understandably, giving publicity to the arrest, prosecution and conviction of an apprehended vandal is also very critical.

Respondents did not mention closing off the market for antiquities as a long-run solution, yet some action in this regard seems justified. Beals (1971), among others, offered some ideas.

In the area of proper planning and management, Flickinger (1977) had much to say. In the course of his work he confronted cultural resource vandalism which appeared to be, in his opinion, the direct result of poor planning, insensitivity, and wrong priorities on the part of area managers and regional officials. Many management actions and policies, which appear unrelated to cultural resources, can subtly affect these resources. For example, allowing rock collecting but not fossil or artifact collecting may lead to a situation in which the visitor is uncertain of what or why some collecting is permissible, but other collecting is not. A policy of selective preservation of cultural resources is a related issue. Cultural resource vandalism in this case also may be unintentionally promoted by leaving the visitor with the idea that the non-selected resources are all right to tamper with (if the visitor even understands which resources are officially being preserved and which are not), and resulting vandalism may be diffused in turn to the selected resources. The construction of roads to bring out timber, to conduct mineral explorations, and so forth, may unexpectantly provide new and easy public access to cultural resources. Data on cultural resource types and locations which were gathered and recorded by agency or contracting archaeologists may leak out to the public through such channels as timber sale contractors (who generally are informed of the presence and locations of cultural resources in the areas where they are working) and U. S. Forest Service district site atlases.

Vandalism which occurs to resources located on adjacent private land, whether it is authorized or not by the landowner, may negatively influence, by its example, attempts to control this activity on the nearby public land. It also makes it more difficult for resource managers to pin down the source of newly-appeared cultural material (in nearby communities, for example), and thus culpability cannot be so readily placed upon the individual(s) possessing this material. Resource managers, it seems clear, must seek out and work with private landowners in the vicinity.

CHAPTER V

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

Summary

The present research investigated the management problem of vandalism to cultural resources within dispersed recreation areas of the Rocky Mountain West: Arizona, Colorado, Idaho, Montana, New Mexico, North Dakota, South Dakota, Utah, Wyoming, and portions of adjacent states. Because little was genuinely known of the true extent and severity of cultural resource vandalism in this region, or of actual techniques used by resource managers to control the problem, three specific objectives were formulated to overcome these deficiencies. These objectives sought to identify characteristics of the vandalism activity occurring in dispersed recreation areas, to identify and evaluate control techniques used by managers, and to offer recommendations for solutions to problems of cultural resource vandalism.

The instrument used to gather data was a six-page questionnaire circulated to primarily field-level employees of the National Park Service (NPS), the U. S. Forest Service (USFS), and U. S. Bureau of Land Management (BLM), the Colorado Division of Parks and Outdoor Recreation (CDPOR), and the U. S. Bureau of Reclamation (BR). One hundred and sixty questionnaires were tabulated and analyzed. Information obtained through library research, correspondence and conversation, and first-hand field experience provided supplemental data.

The results of the survey, much as they were reported, are here summarized by the following categories: extent of cultural resource vandalism; characteristics of cultural resource vandalism; vandalism control techniques used by managers; agency characteristics; and agency differences.

Extent of Cultural Resource Vandalism. All management areas participating in the survey, with only three exceptions, reported the presence of at least some type of cultural resource. For almost every cultural resource type reported by respondents, vandalism was also indicated as having occurred to that type. Twelve resource types were most frequently mentioned as subject to vandalism. The prehistoric resource types of rock art, open camp sites or chipping stations, and stone or adobe-walled dwellings headed this list. Historic buildings of all types were also very frequently cited as subject to vandalism.

Characteristics of Cultural Resource Vandalism. The most common forms of vandalism were: excavation; defacement; surface collection; removal of boards and timbers; shooting, removing, painting and chalking rock art; and theft of objects from buildings. Respondents believed that stripping of boards, excavation, shooting at rock art, general defacement, and surface collection were most detrimental to the resources of all the forms of vandalism reported.

The forms of vandalism to a particular resource type were found to be limited to a consistent two or three forms, giving evidence of systematic approaches to cultural resource vandalism.

Causing cultural resources to be vulnerable to vandalism were found to be: some factor of attractiveness to the visitor (such as

value to a person's collection or on the market); evidence of previous vandalism and natural weathering. Limited law enforcement also contributed to vulnerability. The resource types most sought out by the visitor, because of their attraction for him due to one reason or another, were: open camp sites or chipping stations; rock shelters or caves; stone or adobe-walled dwellings; and rock art.

Cultural resource vandalism occurrences do not seem to depend greatly on a time factor, i.e., day of the week, season of the year, or holidays.

Respondents gave their general impressions of who the vandals were, occasionally being able to support their statements with factual data of recorded incidents. They believed the vandals typically were males, over the age of 30 years, working in groups (probably with one or two other persons), and from towns of 2,500 to 25,000 population which were less than 100 miles away from the vandalized sites. Acting out of motives of personal acquisition or profit, or simply being curious, careless, or ignorant, these vandals gained access most often by two-wheel drive vehicle and to a lesser extent by four-wheel drive vehicle and hiking.

There was reported an upward trend in the frequency of vandalism occurrences for a majority of participating management areas. USFS and BLM respondents most often reported a sharply-rising rate of occurrence. Accounting most for this trend was the factor of greater visitation to the management areas. Also very influential were: visitors' greater knowledge of and access to locations of cultural resources; little law enforcement activity and prosecution; and the public's greater interest in collecting.

Vandalism Control Techniques Used by Managers. Posting of signs was the technique used most frequently by managers to control cultural resource vandalism. Ranger patrol had also been employed quite often. However, over one-third of all respondents reported no real control attempts had been made at all. Other techniques reported as having been frequently used were: interpretation or education; punitive action; physical barriers; and closing of trails or roads. Several respondents wrote in that they had withheld site locations from visitors. Of the local organizations worked with in order to curb vandalism, archaeological and historical societies were most commonly cited. A number of respondents mentioned that resources had been removed following official authorization for such.

As would be expected, the authorized removal of resources was considered the most effective control technique. Closing of trails or roads and erection of physical barriers were also reported as quite effective. Ranger patrol and interpretation were less effective, and posting of signs was felt to be the least effective, despite its prevalent use. The non-disclosure of site locational information was a technique written in, and was believed to be moderately to very effective.

In determining why the management areas had used their particular sets of control techniques, it was found that the three agencies--NPS, USFS, and BLM--had issued guidelines to the management areas concerning cultural resource vandalism, and these guidelines were believed to be applicable to a majority of the vandalism situations represented. However, nearly one-third of all respondents reported low funding

levels for protection, likely causing control measures used to be largely makeshift in nature and not very ideal.

Interpretation and education were believed to have the most potential for success as control techniques in limiting the extent of vandalism. Ranger patrol and law enforcement was a second response close in frequency. Low funding levels were presumably a barrier in preventing these techniques from being more fully exploited at the present time.

Respondents were asked to reflect upon the long-range solutions to cultural resource vandalism, and not simply upon immediate control measures. Responses again centered around education and law enforcement.

Agency Characteristics. Some data were obtained which related not so much to vandalism itself or to the resource, but to the agencies responsible for protection.

Given the most emphasis overall as a cultural resource management objective was the inventory and evaluation of all cultural resources. The second most stressed objective was the preservation of selected resources. As a general management objective, recreation was given the greatest emphasis, followed by interpretation and resource development, which were rated about the same in importance. There was low emphasis overall placed upon vandalism damage repair and ranger patrol-law enforcement.

Twenty-eight percent of all respondents claimed their areas had a serious management problem with cultural resource vandalism. When cultural resources were present, but a vandalism problem was largely

absent, respondents gave as reasons the isolation and lack of public knowledge of the resource, low visitation to the area, and few and/or low concentrations of the resource.

Over two-thirds of all areas reported having at least one employee capable of recognizing cultural sites.

The federal Antiquities Act of 1906 was judged not effective as a vandalism deterrent by a large majority of respondents. They pointed to insufficient public awareness of the Act and law enforcement difficulties as the major reasons for its lack of power. Also cited as influential were problems with the prosecution of cases in court and penalties provided by the law being set too low for the present day.

Agency Differences. When appropriate, the data from each of the three primary agencies was analyzed separately. This was done to determine what some of the differences among the agencies might be, both in terms of actual vandalism problems, and in terms of agency policy and management factors which would have a bearing on how cultural resources were handled.

The NPS respondents most frequently reported stone or adobe-walled dwellings as greatly subject to vandalism. The USFS respondents most commonly cited open camp sites or chipping stations, while the BLM respondents most often pointed to rock art as most subject to vandalism in their areas.

The BLM areas may have had more factual information dealing with the characteristics of vandals at the disposal of their respondents than the NPS or USFS could offer their respondents.

Conjecturing from data on the size of population centers from which vandals were likely coming, the BLM areas may have been drawing more local people who vandalize than the other two agencies. Nearly as many people were gaining access to BLM areas by four-wheel drive vehicle as by two-wheel drive. Hiking was almost as common a means of access in NPS areas as two-wheel drive vehicle.

BLM areas would seem to be experiencing the sharpest rise in the rates of cultural resource vandalism occurrences, followed by the USFS. The lowest increase in vandalism occurrences was reported by the NPS, although nearly one-third of these respondents reported an increasing, as opposed to a stationary, rate of occurrence. For all agencies, these trends were much due to greater visitation to management areas. Also cited as important in bringing about increased rates of vandalism occurrences were greater access by visitors to locations of cultural resources, greater knowledge by visitors of resource locations, and little law enforcement activity and prosecution.

Speaking of management objectives or emphases, the NPS most emphasized, under the "cultural resources" heading, the preservation of all cultural resources, whereas the other two agencies stressed the preservation of selected cultural resources. Under "general management," the NPS responses most frequently indicated interpretation, then recreation. The USFS responses showed a nearly equal emphasis upon recreation and resource development. BLM respondents reported the greatest thrust in their agency was in resource development.

It would appear that guidelines issued by the NPS for the prevention of cultural resource vandalism have the best applicability to

on-the-ground situations, as opposed to those issued by the USFS and BLM. The NPS respondents also reported the least problems with low funding levels for protection.

The BLM appears to have a higher percentage of employees who are able to recognize cultural sites. Also, the greatest percentage of respondents not believing the Antiquities Act to be an effective vandalism deterrent were BLM employees. The percentage was somewhat less for USFS respondents, and lower yet, although still high, for NPS respondents.

Over one-half of all BLM respondents reported having in their areas a major management problem with cultural resource vandalism.

Conclusions

The following are the major conclusions found as a consequence of the research:

1. Cultural resource vandalism is a problem confronting virtually all 160 dispersed recreation areas surveyed, and is becoming worse in many of them.
2. While nearly every resource type is affected, prehistoric resource types and historic buildings are particularly subject to vandalism, much of which is very destructive to the resource.
3. Forms of vandalism for any resource type were generally limited to a few, much-employed forms, evidence that it might be a planned, systematic activity; only for rock art does there appear to be major elements of vandalism as it is commonly thought of in its "wantonly destructive" sense.

4. Motives for vandalism can be largely attributed to a desire to collect for personal acquisition and monetary gain, and to sheer ignorance, carelessness, and curiosity.
5. The incidence of vandalism is very much affected by the level of visitation to these management areas, which is on the increase in most areas, and by the fact that many visitors now have off-road vehicles which are capable of providing access to formerly isolated areas.
6. Many vandals are people living in the vicinity who know the land and its resources. These people are generally adult males, who go out in groups, and, most of the time when doing so, have specific purposes in mind. Their transportation is largely by two-wheel and four-wheel drive vehicles. From repeated visits, they often know the habits of resource managers and visitors, and thus learn to avoid them while pursuing their vandalistic activities. Many other people who vandalize seem to have no intention of being destructive, but because of their ignorance, carelessness, and curiosity regarding cultural resources they become destructive without really being aware of it.
7. Many different control techniques have been tried by resource managers; however, success has been limited. This is likely due to a lack of both understanding of the problem and how to treat it (for example, the posting of signs), and to insufficient funding to support additional staff, to purchase needed equipment and materials, and to accomplish other tasks

preliminary to adequate resource protection. In addition to low funding, agencies are not providing, to the extent possible, guidelines which are applicable to varied circumstances of vandalism. There also does not seem to be occurring an active interchange of ideas concerning cultural resource vandalism among management areas, whether belonging to the same agency or not.

8. While authorized removal of the resource, closing of trails and roads, and erection of physical barriers had proven the most effective, a combination of education and law enforcement would seem to hold the best possibilities for curtailment of vandalism.
9. Proper and timely maintenance of the resource would seem to be quite important in overcoming the negative effects upon visitors of the evidence of previous vandalism and natural weathering.
10. Characteristics of a resource-managing agency probably have a great deal to do with the amount of vandalism it experiences. According to the survey, the NPS stresses interpretation, and the preservation of all cultural resources, and undoubtedly receives greater funding for its cultural resources programs. That the NPS areas are experiencing the least vandalism problems may be a direct result of these emphases. Indeed, all goals, objectives, policies, and practices must work to the benefit of cultural resources if the incidence of vandalism is to be low. When there are conflicts and

inconsistencies among these goals, objectives, policies, and practices in regard to cultural resources, vandalism is bound to be a byproduct. For example, a policy of selective preservation, while being by far more realistic than preservation of all cultural resources, may be a forerunner of vandalism.

Does the potential vandal know which resources are being set aside for preservation and why? Does this policy mean to them that the remaining resources are open to plunder? These are serious questions to be asked if such a policy is not to lead to detrimental activities by the public. Designated historic areas, under the jurisdiction of the NPS, are an example of goals, objectives, policies, and practices all being designed to benefit the cultural resources within these areas. In the survey, these areas reported the lowest incidences of vandalism among all types of management areas.

Recommendations

The recommendations that follow are based on the findings of the study, and are directed toward cultural resource managing agencies at two general levels: on-the-ground management, and state, regional, and national offices. Personnel at these levels can exert some control over the vandalism problem, yet the work of one level cannot entirely be done at the other. Efforts must be made at each level if the present rates of incidence and seriousness of vandalism are to be seriously confronted. Clearly, there will be some necessary overlap in the initiatives each level can make, and in all actions there must

be understanding and mutual support between resource managers (i.e., on-the-ground) and higher-level agency administrators.

Recommendations to State, Regional, and National-level Agency Personnel. It is recommended that higher-level administrators undertake the following:

1. Conduct all agency affairs, including policy, priority, and funding decisions, with a sincere interest in preserving cultural resources and with a thorough understanding of the ways in which their preservation can be threatened.
2. Enlarge present programs of inventorying and evaluating cultural resources. Hire or contract with trained professionals who are capable of providing leadership to these programs and who can comment on the extent and seriousness of vandalism taking place. Make nominations of qualifying cultural assemblages to the National Register of Historic Places.
3. Provide training to field employees in areas of cultural resource inventories, care, and protection.
4. Provide useful guidelines to field managers for the control of cultural resource vandalism.
5. Begin a geographically-wide and intense program of education, relying upon the various media, and calling upon professional archaeologists and historians for advice and leadership. Develop means of involving the public in preservation and protection programs and campaigns.

6. Prevail upon the U. S. Congress to amend the 1906 Antiquities Act to change vague or confusing wording and to strengthen penalties.
7. Urge state legislatures to adopt imaginative, sound, and well-funded plans and procedures for the education of citizens and the protection of resources.
8. Write and enforce agency regulations that would supplement the Antiquities Act and allow for swift prosecution of cases.
9. Develop and fund law enforcement programs that would be closely allied with educational efforts on-the-ground. Provide training in law enforcement to field employees.
10. Promote cooperation among law enforcement officials and judiciary--federal, state, county, and local--who work within common geographical areas.
11. Organize inter-agency workshops where cultural resource vandalism would be discussed, control techniques shared and evaluated, and long-range solutions sought.
12. Urge museums not to purchase or otherwise accept illegally-obtained cultural materials, and urge members of Congress to adopt legislation that would strictly regulate domestic sales of artifacts.
13. Allow survey and excavation permits to archaeologists to be authorized only on the condition that there be prompt local display of artifacts retrieved. Work jointly with sponsoring institutions to provide facilities for display purposes.

Recommendations to On-the-ground Resource Managers. It is recommended that field-level managers undertake the following:

1. Participate (and direct, when appropriate) in cultural resource inventories and evaluations, and receive training in cultural resource management.
2. Make all management decisions and carry out actions with an understanding of their effects (especially vandalism effects) on cultural resources of the management area.
3. Contact citizen groups, organizations, institutions, community leaders, and cultural resource professionals in nearby communities and begin educational programs which encourage the personal involvement of people in planned efforts to care for and protect cultural resources.
4. Develop well-planned law enforcement efforts which utilize manpower and equipment, however limited, to the best advantage. All management of staff should produce the highest possible visibility of them to the public. Closely integrate educational, interpretive, and law enforcement programs.
5. Develop strong on-site information and interpretive programs which stress personal contact and de-emphasize hard-line, authoritative approaches to informing visitors about cultural resources and laws and regulations affecting them.
6. Meet with local law enforcement personnel and judicial officials to explain the agency's stand on cultural resource vandalism. Urge their cooperation and consistent approach

to apprehending and prosecuting individuals involved in cases under their respective jurisdictions.

7. Work with private individuals and companies who own land which receives resource vandalism, authorized or not. Gain their understanding and cooperation in treating the problem consistent with the agency's approach. Assist them in as many ways as possible.
8. Develop ties with nearby field managers of the same and different agencies, and meet to discuss problems being experienced with vandalism.
9. Do not reveal locations of cultural resources when this is likely to unnecessarily endanger them. Post regulative and interpretive signs only when the presence of the resource is obvious. Signs should be positive and not greatly authoritative-sounding.
10. Maintain or create difficult access to unprotected resources through such means as closing roads and erecting barriers. Natural barriers such as piled brush or live vegetation blend in well with the surroundings, and call less attention to begin with to the resource.
11. Publicize the existence and content of the 1906 Antiquities Act.

These recommendations, if followed at the agency levels mentioned, should result in a lessening of the management problem, in dispersed recreation areas, of cultural resource vandalism. All that can possibly be done must be done in order to preserve what physical

heritage is yet intact. If not, it will surely be ". . . a sad paradox that at this time, when trained men are becoming available and new techniques for determining archaeological history are reaching a high pitch of development, the materials themselves should be vanishing like snow before the sun" (Setzler and Strong, 1936, p. 309).

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APPENDICES

APPENDIX A

GLOSSARY

Cultural resources - Any prehistoric or historic object, site, feature, or structure which was manufactured, left, or built by man and which appears to have some significance. (Criteria for evaluating significance were not given to survey respondents. However, it is generally accepted that the criteria for nomination to the National Register of Historic Places are the presently most acceptable criteria for evaluating significance.)

Vandalism - Any unauthorized activity, the effect of which is the injury or destruction of a cultural resource or cultural resources. Unauthorized surface collection and theft are also considered to be vandalism. This term is used broadly in this study, and questions of motive do not enter into its definition. (Authorized collection, digging, and so forth, on private lands are also vandalistic from the standpoint of the science of archaeology.)

APPENDIX B

QUESTIONNAIRE

DEFINITION

"Cultural resource vandalism" is defined here as any unauthorized activity, the effect of which is the injury or destruction of an archeological or historical object, site, or structure. Unauthorized surface collection is also considered to be vandalism in this study.

While responding, please think in terms of the immediate geographical area for which you are responsible or in which you work.

YOUR MANAGEMENT AREA _____ STATE _____

QUESTIONS

1. Does your area contain cultural resources? ____yes ____no

If yes, are they best described as (CHECK AS MANY AS APPROPRIATE, AND TO THE LEFT OF THE RESOURCE NAME):

<u>archeological</u> <u>existing</u>	<u>vandalism</u>	<u>existing</u>	<u>vandalism</u>
____ open camp sites or	____	____ ranching structures	____
____ chipping stations	____	____ historic buildings	____
____ tipi rings	____	____ log	____
____ rock shelters or caves	____	____ frame	____
____ kill sites or buffalo	____	____ masonry	____
____ jumps	____	____ roads, trails	____
____ ceremonial sites or	____	____ battlefields	____
____ structures	____	____ bridges	____
____ granaries or storage	____	____ building ruins	____
____ cists	____	____ railroad structures	____
____ stone or adobe-walled	____	____ mining structures	____
____ dwellings	____	____ root cellars	____
____ rock art	____	____ lime kilns	____
____ wickiups or standing	____	____ ditches	____
____ tipi poles	____		
____ agriculture-related	____	____ (other) _____	____
____ structures	____	____ (specify) _____	____
____ (other) _____	____		
____ (specify) _____	____	____ (other) _____	____
____ (other) _____	____	____ (specify) _____	____
____ (specify) _____	____		

2. Please return to the above list and to the RIGHT of the resource type, in the space provided, check if vandalism has occurred to that particular resource.
3. Select two (2) cultural resource types from the above lists which you feel are particularly subject to vandalism (both can be from one list, or choose one from each list). IDENTIFY THE TWO RESOURCE TYPES BELOW.

A = _____ B = _____

NOTE: Throughout the remainder of the questionnaire, A and B will refer to these respective cultural resources.

4. Briefly describe the form the vandalism generally takes for the resource (for example, defacement of a petroglyph by shooting), and indicate how detrimental it is to the preservation of the resource.

form of vandalism	very detrimental	moderately detrimental	not detrimental
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A _____

B _____

5. Which factor or factors make the resource vulnerable to this vandalism? CHECK ALL APPROPRIATE SPACES.

A B

_____	_____	located in area of concentrated visitor use
_____	_____	resource is well-known, and people seek it out
_____	_____	resource is obviously deteriorating due to natural weathering
_____	_____	resource has obviously been vandalized previously
_____	_____	(other) _____ (specify)
_____	_____	(other) _____ (specify)

6. PLEASE CHECK THE APPROPRIATE BOXES IN RESPONSE TO THE QUESTION.

A		B		
yes	no	yes	no	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the form of the vandalism the same for most occurrences?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Do the vandalism occurrences seem to depend on the day of the week, the season of the year, holidays, etc.?

7. How has the mangement staff attempted to control the problem as it relates to cultural resources A and B? CHECK ALL APPROPRIATE SPACES.

A B

_____	_____	ranger patrol as preventive measure
_____	_____	punitive action for apprehended vandals
_____	_____	posting of signs
_____	_____	erection of physical barriers
_____	_____	closing off of trails or roads
_____	_____	interpretation or education conducted for visitors
_____	_____	working with local organizations (name: _____)
_____	_____	removal of resource itself by staff or other authorized personnel
_____	_____	no real control attempt has yet been made
_____	_____	(other) _____ (specify)

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| 100 | 100 |

(specify)

- A:

If yes, are the guidelines largely applicable to your situation?
 yes no

- low funding levels for protection
- other areas used one or more of these techniques effectively
- initiation by our management staff, using only our own ideas
- (other) _____ (specify) _____
- (other) _____ (specify) _____

- A:

13. In general, which of the following age group(s) seems to be...

13. causing the most vandalism to cultural resources in your area?
(cont)

___ under 14 ___ 14-21 ___ 22-29 ___ over 30 ___ unknown

14. Do you believe the vandals in your area tend to act alone or in groups? ___ alone ___ groups ___ unknown

15. Do the vandals tend to be males or females?

___ males ___ females ___ unknown

16. Which of the following population sizes do you believe most of the people are from who are inflicting the damage to the cultural resources in your area?

___ farm
___ village (up to 2,500)
___ town (2,500 - 25,000)
___ city (25,000 - 100,000)
___ metropolitan area (over 100,000)
___ unknown

17. In terms of proximity to your area, would you describe most of the vandals as being from:

___ local area ___ (other) _____
___ between 35 and 100 miles (no. of miles, or city)
___ out of state
___ unknown

18. What do you believe to be the motivation(s) on the part of the individuals involved in the vandalism? CHECK AS MANY AS APPROPRIATE. Elaborate if you wish.

___ personal acquisition
___ profit motive
___ rebellion against agency, society, etc.
___ recreation
___ showing off
___ curiosity (for example, what was inside a building)
___ no underlying motivations - carelessness
___ no underlying motivations - were unaware of the effect of their actions
___ (other) _____
___ (specify)
___ (other) _____
___ (specify)

19. Do you believe that the individuals causing the vandalism tend to be "repeaters", that is, do they return to your area for the purpose of carrying out further destruction (regardless of whether or not they think they are being destructive)? ___ yes ___ no

20. Did you answer questions 13 - 19, relating to vandals, on the basis of:

___ actual incidents
___ general impressions

21. To the resources receiving the greatest amount of vandalism, are visitors gaining access primarily by:
- ☐ 2-wheel drive vehicle
 - ☐ 4-wheel drive vehicle
 - ☐ motorbike
 - ☐ hiking
 - ☐ (other) _____
- (specify)
22. What has been the trend in cultural resource vandalism occurrences in your area over the last five years?
- ☐ sharp decrease
 - ☐ gradual decrease
 - ☐ has remained about the same
 - ☐ gradual increase
 - ☐ sharp increase
23. To what factor(s) do you attribute this trend? CHECK AS MANY AS APPROPRIATE.
- ☐ greater visitation to area as a whole
 - ☐ greater access by visitor to locations of cultural resources
 - ☐ greater knowledge of locations of resources by visitor
 - ☐ little law enforcement activity and prosecution
 - ☐ less visitation to area as a whole
 - ☐ less access to locations of cultural resources by visitor
 - ☐ greater law enforcement activity and prosecution
 - ☐ presence of fewer resources than previously
 - ☐ different "type" of visitor (describe: _____)
 - ☐ change in attitude of responsible resource managers (describe: _____)
 - ☐ (other) _____
- (specify)
24. Please rate some of the management objectives of the geographical area in which you work by assigning relative values to the following:
- MARK A NUMBER IN EACH BLANK: 1 = GREAT EMPHASIS
2 = AVERAGE EMPHASIS
3 = LITTLE OR NO EMPHASIS
- cultural resources
- ☐ inventory/evaluation of all cultural resources
 - ☐ preservation of all cultural resources
 - ☐ preservation of selected cultural resources
 - ☐ informing visitors, upon request, of types and locations of cultural resources
- general management
- ☐ recreation
 - ☐ interpretation
 - ☐ resource development (e.g., timber, minerals, pastureland)
- vandalism
- ☐ swiftly repairing, when possible, damage caused by vandals
 - ☐ patrol - law enforcement

25. How serious is cultural resource vandalism to the overall successful management of your area?

☐ major problem ☐ minor problem ☐ no problem

If your area contains cultural resources but has very minor or no problems with vandalism to these resources, please briefly speculate as to why this is the case.

26. Is at least one field employee in your area adequately trained to recognize cultural sites? ☐ yes ☐ no

27. Do you believe that the federal Antiquities Act of 1906 is an effective deterrent to cultural resource vandalism? ☐ yes ☐ no
If no, why not?

28. What do you believe to be the most effective long-run solution to the problem of cultural resource vandalism in your area?

29. Does your agency have on file any records or reports which might contribute to this study? ☐ yes ☐ no
If yes, how can this information be obtained?

COMPLETED BY _____ POSITION _____ DATE _____

Thank you!

APPENDIX C

ORIGIN OF THESIS TOPIC

In the text I stated that I had found in the literature no comprehensive, regionally-broad studies of cultural resource vandalism. To partially fill this void is the central reason behind my undertaking this current study. However, prior to reviewing the literature I felt compelled to look into this problem. The following narrative is an explanation of why I was so motivated and the initial transformation of a vague research idea into a better-defined set of objectives and study approach. I am including this as an appendix for the benefit of recording it.

I worked one year, 1975 to 1976, doing field inventory work for the National Park Service's List of Classified Structures program. The job demanded inspection of historic and prehistoric structures in Park Service areas throughout the six-state Rocky Mountain Region of the NPS. Through this means I confirmed my earlier suspicions that vandalism was causing harm to cultural resources.

Glen Canyon National Recreation Area is one example of the endangerment of cultural resources by vandalism. There, boaters are gaining easy access to formerly remote areas due to the formation of Lake Powell. Prehistoric Anasazi Indian ruins and rock art panels are closer at hand and more likely to be tampered with. Another example is Florissant Fossil Beds National Monument. There, an historic barn was almost totally stripped of its weathered board siding one night by an unknown party. Based on my visits to 29 Park Service areas, I made

two observations concerning cultural resource vandalism: 1) there appeared to be a lack of full comprehension of the dimensions of the problem region-wide, and 2) there appeared to be no unified, consistent approach to solving it.

Upon the conclusion of the job and my return to graduate school, attempts were made to determine what other agencies--namely, U. S. Forest Service, the Bureau of Land Management, Colorado Division of Parks and Outdoor Recreation--were experiencing with regard to cultural resource vandalism. The objective was to be certain that a major research effort was justified. Much discussion in person and correspondence with agency personnel was conducted during August, September, and October, 1976. Two "fact-finding" trips were made. The first was to the Black Hills and Nebraska National Forests. The second was to southeast Utah to meet with BLM officials of the Moab District and with Park Service personnel of the Needles District of Canyonlands National Park. I accompanied rangers of both agencies on jeep patrols on this latter trip. In the Cedar Mesa area of the San Juan Resource Area (BLM) two blatant examples of recent pot-hunting of Anasazi ruins were seen. The trips, discussions, and correspondence were all very helpful in, first, justifying, then properly orienting, a research project.

Initially, I sought Park Service funding for the project. Due to funding limitations this did not work out. However, an unexpected source of personal support (the Hill Fellowship) made it possible for me to fund the research. This ultimately proved to be the best route because it provided freedom to proceed without having to submit to the prerogatives of a funding agency.

APPENDIX D

STATES REPRESENTED IN SURVEY

State	Agencies Responding ¹					Number of Responses for Each State
	NPS	USFS	BLM	BR	CDPOR	
Arizona	X	X	X	X		31
Colorado	X	X	X	X	X	31
Idaho	X	X	X			18
Montana	X	X	X	X		13
New Mexico	X	X	X	X		19
North Dakota	X	X		X		4
South Dakota	X	X	X	X		13
Utah	X	X	X			19
Wyoming	X	X	X	X		26
<u>Partial Responses²</u>						
California			X			1
Kansas		X				1
Nebraska		X				3
Nevada	X					1
Oklahoma				X		1
Texas				X		1

- ¹NPS - National Park Service
 USFS - Forest Service
 BLM - Bureau of Land Management
 BR - Bureau of Reclamation
 CDPOR - Colorado Division of Parks and Outdoor Recreation

- ²"Partial Response" means that because these states were combined with others for a response, the response was only incidental; each unit of the agency indicated within the state was not necessarily represented.

APPENDIX E

TYPES, NUMBER, AND NAMES OF MANAGEMENT AREAS PARTICIPATING IN SURVEY

National Park Service

12 Parks
32 Monuments
1 Monument/Cemetery
6 Historic Sites
1 Historic Park
1 Battlefield
4 Recreation Areas
1 Parkway
2 Memorials
1 Memorial Park
61 responses

U. S. Forest Service*

43 Forests
26 Forest Ranger Districts
9 Grasslands
64 responses

Bureau of Land Management

31 Districts
1 Resource Area
31 responses

Other

1 Colorado State Recreation Area
2 Bureau of Reclamation Regions
1 Bureau of Reclamation Project Area
4 responses

*In several instances joint Forests responded as one unit; likewise for Forests and Grasslands administered jointly.

National Park Service

Arizona

Canyon de Chelly National Monument
Casa Grande Ruins National Monument
Chiricahua National Monument
Coronado National Memorial
Fort Bowie National Historic Site
Grand Canyon National Park
Hohokam-Pima National Monument
Montezuma Castle/Well National Monument
Organ Pipe Cactus National Monument
Pipe Spring National Monument
Saguaro National Monument
Tonto National Monument
Tumacacori National Monument
Walnut Canyon National Monument

Colorado

Bent's Old Fort National Historic Site
Black Canyon of the Gunnison National Monument
Colorado National Monument
Curecanti National Recreation Area
Florissant Fossil Beds National Monument
Great Sand Dunes National Monument
Mesa Verde National Park
Rocky Mountain National Park
Yucca House National Monument

Idaho

Craters of the Moon National Monument
Nez Perce National Historical Park

Montana

Big Hole National Battlefield
Custer Battlefield National Monument and National Cemetery
Glacier National Park
Grant-Kohrs Ranch National Historic Site

New Mexico

Aztec Ruins National Monument
Bandelier National Monument
Capulin Mountain National Monument
Carlsbad Caverns National Park
El Morro National Monument
Fort Union National Monument
Gila Cliff Dwellings National Monument
Gran Quivira National Monument
Pecos National Monument
White Sands National Monument

North Dakota

Theodore Roosevelt National Memorial Park

South Dakota

Badlands National Monument
Mount Rushmore National Memorial
Wind Cave National Park

Utah

Bryce Canyon National Park
Canyonlands National Park
Capitol Reef National Park
Cedar Breaks National Monument
Golden Spike National Historic Site
Timpanogos Cave National Monument
Zion National Park

Wyoming

Devil's Tower National Monument
Fort Laramie National Historic Site
Fossil Butte National Monument
Grand Teton National Park
John D. Rockefeller, Jr. Memorial Parkway

Arizona/Nevada

Lake Meade National Recreation Area

Arizona/Utah

Glen Canyon National Recreation Area

Colorado/Utah

Dinosaur National Monument
Hovenweep National Monument

Idaho/Montana/Wyoming

Yellowstone National Park

Montana/North Dakota

Fort Union Trading Post National Historic Site

Montana/Wyoming

Bighorn Canyon National Recreation Area

U. S. Forest Service

Arizona

Apache and Sitgreaves National Forests:
Alpine Ranger District
Black River Ranger District
Chevelon Ranger District
Lakeside Ranger District
Springerville Ranger District
Coconino National Forest
Coronado National Forest

Arizona (Cont.)

Kaibab National Forest
Prescott National Forest
Tonto National Forest

Colorado

Arapaho and Roosevelt National Forests and Pawnee National Grassland
Grand Mesa, Uncompahgre and Gunnison National Forests
Pike and San Isabel National Forests, Comanche National Grassland,
and Cimarron National Grassland (Kansas)
Rio Grande National Forest
Routt National Forest
San Juan National Forest
White River National Forest
Aspen Ranger District
Blanco Ranger District
Dillon Ranger District
Eagle Ranger District
Holy Cross Ranger District
Rifle Ranger District

Idaho

Boise National Forest
Caribou National Forest
Idaho Panhandle National Forests
Payette National Forest
Salmon National Forest
Salmon River Ranger District
Sawtooth National Forest

Montana

Sula Ranger District

New Mexico

Carson National Forest
Gila National Forest
Santa Fe National Forest

North Dakota

Medora Ranger District (Little Missouri National Grassland)

Utah

Dixie National Forest
Fishlake National Forest
Monticello Ranger District
(Manti-LaSal National Forest)
Uinta National Forest
Wasatch and Cache National Forests

Wyoming

Bighorn National Forest
Bridger and Teton National Forests
Medicine Bow National Forest
Thunder Basin National Grassland
Shoshone National Forest
Clarks Fork Ranger District
Graybull Ranger District
Lander Ranger District
Wapiti Ranger District
Wind River Ranger District

Idaho/Wyoming

Targhee National Forest

Nebraska/South Dakota

Nebraska National Forest:
Pine Ridge, Bessey, Fall River, Wall Ranger Districts
Samuel R. McKelvie National Forest

New Mexico/Oklahoma/Texas

Cibola National Forest; Kiowa, Rita Blanca, and Black Kettle
National Grasslands

South Dakota/Wyoming

Black Hills National Forest
Custer Ranger District
Elk Mountain Ranger District
Nemo Ranger District
Pactola Ranger District
Spearfish Ranger District

Utah/Wyoming

Ashley National Forest

Bureau of Land Management

Arizona

Arizona Strip District
Phoenix District
Safford District

Colorado

Canon City District
Craig District
Grand Junction District
Montrose District

Idaho

Boise District
Burley District
Coeur d'Alene District
Idaho Falls District
Salmon District
Shoshone District

Montana

Butte District
Garnet Resource Area (Missoula District)
Lewistown District

New Mexico

Albuquerque District
Las Cruces District
Roswell District
Socorro District

Utah

Cedar City District
Moab District
Richfield District
Salt Lake District
Vernal District

Wyoming

Casper District
Rawlins District
Rock Springs District
Worland District

Arizona/California

Yuma District

Montana/South Dakota

Miles City District

Bureau of Reclamation

Central Arizona Project Area (Arizona)
Southwest Region (Colorado, New Mexico)
Upper Missouri Region (Montana, North Dakota, South Dakota, Wyoming)

Colorado Division of Parks and Outdoor Recreation

Navajo State Recreation Area

APPENDIX F

POSITIONS OF SURVEY RESPONDENTS BY AGENCY

National Park Service

17 Superintendents, Area Managers
9 Supervisory Rangers
6 Rangers
15 Supervisory Naturalists, Interpreters
1 Resource Management Specialist
6 Park Technicians
6 Cultural Resource Specialists¹
1 Administrative Clerk

U. S. Forest Service

1 Forest Supervisor
10 Supervisory Rangers (District Rangers)
10 Recreation and Lands Staff Personnel
7 Archaeologists
10 Paraprofessional Cultural Resource Specialists²
9 Cultural Resource Coordinators (forest-level)
2 Visitor Information Specialists
1 Law Enforcement Coordinator
7 Foresters
3 Forestry Technicians
1 Range Conservationist

Bureau of Land Management

23 Archaeologists
7 Recreation Planners
1 Historian

Bureau of Reclamation

2 Archaeologists
1 Cultural Resource Coordinator

Colorado Division of Parks and Outdoor Recreation

1 Park Manager

¹ Archaeologists, historians, etc.

² Region 2 only.

APPENDIX G

AN ACT FOR THE PRESERVATION OF AMERICAN ANTIQUITIES

Public Law 59-209 (June 8, 1906, 34 Stat. 225)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That any person who shall appropriate, excavate, injure, or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States, without the permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated, shall upon conviction, be fined in a sum of not more than five hundred dollars or be imprisoned for a period of not more than ninety days, or shall suffer both fine and imprisonment, in the discretion of the court.

Sec. 2. That the President of the United States is hereby authorized, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and may reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected: Provided, That when such objects are situated upon a tract covered by a bona fide unperfected claim or held in private ownership, the tract, or so much thereof as may be necessary for the proper care and management of the object, may be relinquished to the Government, and the Secretary of the Interior is hereby authorized to accept the relinquishment of such tracts in behalf of the Government of the United States.

Sec. 3. That permits for the examination of ruins, the excavation of archeological sites, and the gathering of objects of antiquity upon the lands under their respective jurisdictions may be granted by the Secretaries of the Interior, Agriculture, and War to institutions which they may deem properly qualified to conduct such examination, excavation, or gathering, subject to such rules and regulations as they may prescribe: Provided, That the examinations, excavations, and gatherings are undertaken for the benefit of reputable museums, universities, colleges, or other recognized scientific or educational institutions, with a view to increasing the knowledge of such objects, and that the gatherings shall be made for permanent preservation in public museums.

Sec. 4. That the Secretaries of the Departments aforesaid shall make and publish from time to time uniform rules and regulations for the purpose of carrying out the provisions of this Act.

APPENDIX H

RESPONDENT COMMENTS ON EFFECTIVE VANDALISM CONTROL TECHNIQUES

National Park Service

Hohokam-Pima National Monument, Arizona

(Hohokam archaeological site) - "It's hard to say how effective the patrolling and sign posting has been. The pot hunting occurs at night when the ranger is not on duty. We can't estimate that the posting of signs has cut down on the occurrence of pot hunting in the area as it still occurs."

Montezuma Castle/Well, Arizona

(dwellings) - "At the current time we have signs posted closing a few ledge ruins (Area closed behind this sign) because of the safety problem (also vandalism). Previously we had a sign which read Dangerous Do Not Go Beyond This Point! Even though there is an obvious danger involved most visitors who went into the dwellings stated they didn't think it was dangerous! We are now trying interpretive signs also."

(trash mounds) - "At the two large trash mounds at Montezuma Well, one is located at the end of spur trail and a sign 'Area closed behind this sign' is located there. This together with a barrier of brush (primarily catclaw and mesquite) is very effective in preventing casual 'poking around' as most visitors call it. The second mound has no sign but is very well brushed up - and this is effective."

Organ Pipe Cactus National Monument, Arizona

(open camp sites) - "Closing of roads has cut down on the numbers of people entering an area."

Tonto National Monument, Arizona

(stone or adobe-walled dwellings) - "Walls free of graffiti do not encourage others to write on the walls."

Tumacacori National Monument, Arizona

(historic buildings, building ruins-subsurface) - "As a National Park Service area, public awareness and appreciation of site reduces vandalism."

Walnut Canyon National Monument, Arizona

(stone dwellings - cliff) - "Education works best, particularly if ranger is there at time of infraction. People who are persistent in illegal behavior can avoid any education or ranger-contact."

(log cabin) - "Resource located away from normal use area, so difficult to know when people are there; patrols are sporadic."

Mesa Verde National Park, Colorado

(stone dwellings) - "Back-country areas are closed to hiking and camping."

Rocky Mountain National Park, Colorado

(camp sites/chipping stations, building ruins) - "Punitive action for apprehended vandals is not frequent enough, and interpretation conducted for visitors is only moderately effective."

Yucca House National Monument, Colorado

(ceremonial sites, stone buildings) - "Yucca House is a small unit surrounded by a private ranch. It receives almost no publicity or visitation."

Glacier National Park, Montana

(mining structures, historic furnishings) - "Removal of small items to museum. Long trail distances or distances from road are most effective."

Grant-Kohrs Ranch National Historic Site, Montana

(frame ranch structure, masonry ranch structure) - "Nothing compares with physical presence of a patrol - also, punitive action when caught."

Aztec Ruins National Monument, New Mexico

(stone or adobe-walled structures) - "Ranger patrols combined with interpretation is the most effective."

Gila Cliff Dwellings National Monument, New Mexico

(stone or adobe-walled dwellings, trails) - "Frequent contact with Rangers on trail and at Cliff Dwellings is the most effective technique for preventing, discovering, and apprehending vandals."

El Morro National Monument, New Mexico

(stone or adobe-walled dwellings) - "Ranger patrols combined with interpretation."

Pecos National Monument, New Mexico

(ceremonial structures, stone or adobe-walled dwellings) - "Quick repair, so that visitors do not see damaged resource, has much the same effect as keeping trash picked up. If it's neat, people don't litter as much; if it's in good repair, they may be less inclined to damage anything."

White Sands National Monument, New Mexico

(open camp sites) - "Patrols and punitive action very effective deterrent."

(Indian hearth sites) - "Frequent patrols are best preventative."

Badlands National Monument, South Dakota

(open camp sites or chipping stations; homestead sites) - "Patrol deterrent has local value, but reflects limitations of manpower and access in a large area. Punitive efforts may have a strong influence on individual violators, but are seldom publicized to shape attitudes of all visitors. Interpretation and signs reach larger audience and increase awareness and sensitivity."

Timpanogos Cave National Monument, Utah

(building ruins, masonry walls) - "Ranger patrol increase has minimized all vandalism in the area, not only to cultural resources but to natural features and physical facilities. Taking punitive action against some apprehended vandals has a definite effect on decreasing vandalism."

Zion National Park, Utah

(caves, rock art) - "Limiting access and location information is most effective and most economical protection, but of course not necessarily a good approach from standpoint of interpretation for visitors."

John D. Rockefeller, Jr. Memorial Parkway

(historic buildings, building ruins) - "Closing the area to easy observation to protect it until it can be studied."

Hovenweep National Monument, Colorado/Utah

(rock shelters, caves; stone or adobe-walled dwellings) - "The physical proximity of a Ranger discourages vandalism."

Yellowstone National Park, Idaho/Montana/Wyoming

(chipping stations) - "Random parking near Obsidian Cliff has been prevented. Interpretive warning sign has been placed on trail. Very little collecting now observed."

(wickiups) - "The location of the wickiups is so obscure that visitors rarely know of their existence. Vandalism is extremely rare."

U. S. Forest Service

Coconino National Forest, Arizona

(cave sites and masonry pueblos - with trash areas) - "Closing off roads has worked to some degree in a location where the road was the only way in--where other approaches were blocked by deep washes that even 4-wheel couldn't cross."

(rock art) - "The public awareness/education effort is still too recent to assess any effectiveness it might have."

Arapaho-Roosevelt National Forests; Pawnee National Grassland, Colorado
(ranching structures, mining structures) - "Physically closing roads and trails."

White River National Forest - Aspen Ranger District, Colorado
(historic buildings) - "Working with Pitkin County and the Aspen Historical Society."

Eagle Ranger District, Colorado
(mining structures and towns) - "How effective I'm not sure, but mostly in our old towns and mining structures the local people do the enforcement."

Rifle Ranger District, Colorado
(chipping stations) - "Chipping stations are such small sites and scattered District wide, that no preventive action is reasonable."

Salmon River Ranger District, Idaho
(rock shelters) - "Patrols have only been moderately effective because of the limitations on funding. Salvage archaeological digs have succeeded in saving 'knowledge' but are expensive and are of limited applicability."

(rock art) - "Patrols are moderately effective but cannot cover the entire area at all periods of time."

Sawtooth National Forest, Idaho
(open camp sites) - "The visitor information (naturalist) program is used to acquaint the public with cultural resource values."

(building ruins) - "Several years ago a sign "Protect Idaho History do not remove"--was placed at Sawtooth City historical site and antiquity signs were placed on selected buildings."

Santa Fe National Forest
(agriculture-related structures, pueblos) - "Punitive measures are ridiculous. A \$250.00-\$500.00 fine does not deter pot-hunting with pots valued at \$2000-\$3000."

Dixie National Forest, Utah
(granaries, dwellings-cliff caves) - "Success limited by factors of: limited personnel, lack of local cooperation and determination of well-equipped pot-hunters. No techniques are successful or will be without adequate court backing."

Shoshone National Forest, Lander District, Wyoming
(rock art) - "Keeping known site locations confidential on sites that are not easily accessible seems to be our only alternative at the present, until funding becomes available to protect the culture resource."

Shoshone National Forest, Wind River Ranger District, Wyoming
(petrified forest) - "The signing has had some effect but only on the 'honest' individual."

(building ruins) - "Most of the old tie hack buildings only have a semblance of the foundation left. Access generally prevents additional vandalism."

Nebraska National Forest, Fall River District, Nebraska/South Dakota
(open camp sites, historic buildings) - "Location of known sites is kept rather secret."

Nebraska National Forest and Associated Units, Pine Ridge, Bessey, Fall River, Wall Districts, Nebraska/South Dakota
(fossil beds) - "Posting roads into fossil areas with sign stating collecting fossils is not allowed."

Bureau of Land Management

Safford District, Arizona

(rock shelters and caves) - "Chain link fences across front of caves and overhangs have been effective but have been in place for only 6 months. Very expensive measure."

(rock shelters and caves, open camp sites-including villages) - "Removal of artifacts effective but only protects a small percentage of the resources."

Canon City District, Colorado

(historic buildings) - "Removal (of the resource) can protect but is 1) generally impractical, 2) the context is often more significant than the structure itself."

Montrose District, Colorado

(stone buildings) - "Massive ranger patrol would be better. Removal of access appears to be the most effective yet. Prosecution would also be good."

Burley District, Idaho

(open sites) - "Control of location data seems to be the most effective means available at this time."

(petroglyphs-rock art) - "Most of the known petroglyphs are difficult to find and those that were in obvious places have long since been destroyed. Fencing and signing in at least one case has promoted vandalism."

Garnet Resource Area, Missoula District, Montana

(Historic buildings, mining structures) - "We have placed a caretaker at the Garnet Ghost Town on a permanent basis. Also, there is a recreation technician for summer tourist supervision."

Las Cruces District, New Mexico

(prehistoric village sites-sites with structures, pictographs/ petroglyphs) - "Closing roads and trails shows most promise. Education seems to have little effect. Removing material (by staff, other authorized personnel) is detrimental, since most museums are not up-to-date in cataloguing or storage arrangements and lack funds to correct this. Material removed becomes unavailable for analysis, just as though it were picked up by amateurs."

Moab District, Utah

(stone and adobe-walled structures, rock art) - "Late '60's fencing not effective."

Vernal District, Utah

(open camp sites) - "Surface collection of sites by approved institutions, under contract, has prevented destruction of scientific data. Teaching school children, newspaper articles and other forms of education are difficult to assess."

(building ruins) - "As yet, we haven't really found an effective method of dealing with vandalism of old buildings."

Rock Springs District, Wyoming

(rock art) - "One group of petroglyphs has a chain link fence around it, but they are remote and are not well known so it is hard to determine if the fence has been effective."

Worland District, Wyoming

(open camp sites) - "Have been only able to remove resource, therefore have not adequately tried any other technique."

Yuma District, Arizona/California

(intaglios) - "In the case of the intaglios we may have achieved some measure of success through fencing, signing and education, but this is only a gut feeling."

Colorado Division of Parks and Outdoor Recreation

Navajo State Recreation Area, Colorado

(rock art) - "Established living quarters in close proximity to culture area."

(historic buildings) - "Disguised culture areas under dirt fills until a later date."